



Docket No. CL001201DIV
Application Serial No. 10/644,021
Inventors: Ming-Hui WEI et al.
Title: ISOLATED HUMAN ENZYME PROTEIN...

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1 GCGCCTGGGG ACCGCAGAGG TGAGAGTCGC GCCCGGGAGT CCGCCGCGCTG
51 CGCCAGGATG GAGTTCGTGA AATGCCTTGG CCACCCCGAA GAGTTCCTACA
101 ACCTGGTGCG CTTCCGGATC GGGGGCAAGC GGAAGGTGAT GCCCAAGATG
151 GACCAGGACT CGCTCAGCAG CAGCCTGAAA ACTTGCTACA AGTATCTCAA
201 TCAGACCACT CGCAGTTTCG CAGCTGTTAT CCAGGCGCTG GATGGGGAAA
251 TGCGCAACGC AGTGTGCATA TTTTATCTGG TTCTCCGAGC TCTGGACACA
301 CTGGAAGATG ACATGACCAT CAGTGTGGAA AAGAAGGTCC CGCTGTTACA
351 CAACTTTTCAC TCTTTCCTTT ACCAACCAGA CTGGCGGTTC ATGGAGAGCA
401 AGGAGAAGGA TCGCCAGGTG CTGGAGGACT TCCCAACGTA CTGCCACTAT
451 GTTGCTGGGC TGGTCGGAAT TGGCCTTTCC CGTCTTTTCT CAGCCTCAGA
501 GTTTGAAGAC CCCTTAGTTG GTGAAGATAC AGAACGTGCC AACTCTATGG
551 GCCTGTTTCT GCAGAAAACA AACATCATCC GTGACTATCT GGAAGACCAG
601 CAAGGAGGAA GAGAGTTCTG GCCTCAAGAG GTTTGGAGCA GGTATGTTAA
651 GAAGTTAGGG GATTTTGCTA AGCCGGAGAA TATTGACTTG GCCGTGCAGT
701 GCCTGAATGA ACTTATAACC AATGCACTGC ACCACATCCC AGATGTCATC
751 ACCTACCTTT CGAGACTCAG AAACCAGAGT GTGTTTAACT TCTGTGCTAT
801 TCCACAGGTG ATGGCCATTG CCACTTTGGC TGCCTGTTAT AATAACCAGC
851 AGGTGTTCAA AGGGGCAGTG AAGATTCGGA AAGGGCAAGC AGTGACCCTC
901 ATGATGGATG CCACCAATAT GCCAGCTGTC AAAGCCATCA TATATCAGTA
951 TATGGAAGAG ATTTATCATA GAATCCCCGA CTCAGACCCA TCTTCTAGCA
1001 AAACAAGGCA GATCATCTCC ACCATCCGGA CGCAGAACTCT TCCCAACTGT
1051 CAGCTGATTT CCCGAAGCCA CTACTCCCCC ATCTACCTGT CGTTTGTCAT
1101 GCTTTTGGCT GCCCTGAGCT GGCAGTACCT GACCACTCTC TCCCAGGTAA
1151 CAGAAGACTA TGTTTCAGACT GGAGAACACT GATCCCAAAT TTGTCCATAG
1201 CTGAAGTCCA CCATAAAGTG GATTTACTTT TTTTCTTTAA GGATGGATGT
1251 TGTGTTCTCT TTATTTTTTT CCTACTACTT TAATCCCTAA AAGAACGCTG
1301 TGTGGCTGGG ACCTTTAGGA AAGTGAAATG CAGGTGAGAA GAACCTAAAC
1351 ATGAAAGGAA AGGGTGCCTC ATCCCAGCAA CCTGTCTCTG TGGGTGATGA
1401 TCACTGTGCT GCTTGC GGCT CATGGCAGAG CATTCACTGC CACGGTTTAG
1451 GTGAAGTCGC TGCATATGTG ACTGTCATGA GATCCTACTT AGTATGATCC
1501 TGGCTAGAAAT GATAATTTAA AGTATTTAAT TTGAAAAAAA AAAAAAAAAA
1551 AAAAAAAAAA AAAAAAAAAA AAAAAAAAAA AAAAAAAAAA AAAAAAAAAA
1601 AAAAAA (SEQ ID NO:1)
```

FEATURES:

5'UTR: 1-57
Start Codon: 58
Stop Codon: 1180
3'UTR: 1183

Homologous proteins:

Top 10 BLAST Hits

	Score	E
CRA 108000024649260 /altid=gi 12734163 /def=ref XP_005134.2 fa...	770	0.0
CRA 18000004925908 /altid=gi 4758350 /def=ref NP_004453.1 farn...	743	0.0
CRA 18000004929946 /altid=gi 2135096 /def=pir I38245 farnesyl-...	741	0.0
CRA 18000004993865 /altid=gi 2136196 /def=pir I52090 squalene ...	740	0.0
CRA 18000004932414 /altid=gi 6753838 /def=ref NP_034321.1 farn...	671	0.0
CRA 18000004937535 /altid=gi 9506591 /def=ref NP_062111.1 farn...	654	0.0
CRA 1000682330885 /altid=gi 6002565 /def=gb AAF00038.1 (AF0903...	582	e-165
CRA 335001098694081 /altid=gi 11514495 /def=pd 1EZFA Chain A,...	579	e-164
CRA 18000005103884 /altid=gi 2463565 /def=dbj BAA22557.1 (AB00...	282	1e-74
CRA 18000005103885 /altid=gi 7434086 /def=pir T00489 farnesyl-...	280	4e-74

FIGURE 1A

BLAST dbEST hits:

	Score	E
gi 12926380 /dataset=dbest /taxon=960...	1441	0.0
gi 12945082 /dataset=dbest /taxon=960...	1370	0.0
gi 12921315 /dataset=dbest /taxon=960...	1346	0.0
gi 11642571 /dataset=dbest /taxon=96...	1330	0.0
gi 9141948 /dataset=dbest /taxon=9606...	1281	0.0
gi 13040072 /dataset=dbest /taxon=960...	1233	0.0
gi 12944143 /dataset=dbest /taxon=960...	1055	0.0

EXPRESSION INFORMATION FOR MODULATORY USE:

library source:

From BLAST dbEST hits:

gi|12926380 placenta
gi|12945082 T cells from T cell leukemia
gi|12921315 Fetal brain
gi|11642571 pancreas
gi|9141948 Burkitt lymphoma
gi|13040072 bladder

From tissue screening panels:

Whole liver

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1 MEFVKCLGHP EEFYNLVRFR IGGKRKVMPPK MDQDSLSSSL KTCYKYLNT
51 SRSFAAVIQA LDGEMRNAV C IFYLVLRALD TLEDDMTISV EKKVPLLHNF
101 HSFLYQPDWR FMESKEKDRQ VLEDFTPTCH YVAGLVGIGL SRLFSASEFE
151 DPLVGEDTER ANSMGLFLQK TNIIRDYLE D QQGGREFWPQ EVWSRYVKKL
201 GDFAKPENID LAVQCLNELI TNALHHIPDV ITYLSRLRNQ SVFNFCAIPQ
251 VMAIATLAAC YNNQQVFKGA VKIRKGQAVT LMMDATNMPA VKAIIYQYME
301 EIYHRIPDS D PSSSKTRQII STIRTQNLPN CQLISRSHYS PIYLSFVMLL
351 AALSWQYLTT LSQVTEDYVQ TGEH (SEQ ID NO:2)

FEATURES:

Functional domains and key regions:

[1] PDOC00001 PS00001 ASN_GLYCOSYLATION
N-glycosylation site

Number of matches: 2

1 48-51 NQTS (residues 48-51 of SEQ ID NO:2)
2 239-242 NQSV (residues 239-242 of SEQ ID NO:2)

[2] PDOC00005 PS00005 PKC_PHOSPHO_SITE
Protein kinase C phosphorylation site

Number of matches: 5

1 39-41 SLK
2 50-52 TSR
3 158-160 TER
4 313-315 SSK
5 322-324 TIR

[3] PDOC00006 PS00006 CK2_PHOSPHO_SITE
Casein kinase II phosphorylation site

Number of matches: 3

1 81-84 TLED (residues 81-84 of SEQ ID NO:2)
2 145-148 SASE (residues 145-148 of SEQ ID NO:2)
3 147-150 SEFE (residues 147-150 of SEQ ID NO:2)

[4] PDOC00008 PS00008 MYRISTYL
N-myristoylation site

Number of matches: 2

1 137-142 GIGLSR (residues 137-142 of SEQ ID NO:2)
2 276-281 GQAVTL (residues 276-281 of SEQ ID NO:2)

[5] PDOC00009 PS00009 AMIDATION
Amidation site

22-25 GGKR (residues 22-25 of SEQ ID NO:2)

[6] PDOC00802 PS01044 SQUALEN_PHYTOEN_SYN_1
Squalene and phytoene synthases signature 1

128-143 YCHYVAGLVGIGLSRL (residues 128-143 of SEQ ID NO:2)

[7] PDOC00802 PS01045 SQUALEN_PHYTOEN_SYN_2
Squalene and phytoene synthases signature 2

164-189 MGLFLQKTNIIRDYLEQQGGREFWP (residues 164-189 of SEQ ID NO:2)

FIGURE 2A

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Membrane spanning structure and domains:

Helix	Begin	End	Score	Certainty
1	125	145	0.834	Putative
2	241	261	1.467	Certain
3	339	359	1.716	Certain

FIGURE 2B

BLAST Alignment to Top Hit:

```
>CRA|18000004925908 /altid=gi|4758350 /def=ref|NP_004453.1|
    farnesyl-diphosphate farnesyltransferase 1;
    Farnesyl-diphosphate farnesyltransferase 1 (squalene
    synthase); Squalene synthase [Homo sapiens] /org=Homo
    sapiens /taxon=9606 /dataset=nraa /length=417
    Length = 417

Score = 743 bits (1898), Expect = 0.0
Identities = 374/417 (89%), Positives = 374/417 (89%), Gaps = 43/417 (10%)

Query: 1  MEFVKCLGHPEEFYNLVRFRIGGKRKVMKMDQDSLSSSLKTCYKYLNQTSSRSFAAVIQA 60
      MEFVKCLGHPEEFYNLVRFRIGGKRKVMKMDQDSLSSSLKTCYKYLNQTSSRSFAAVIQA
Sbjct: 1  MEFVKCLGHPEEFYNLVRFRIGGKRKVMKMDQDSLSSSLKTCYKYLNQTSSRSFAAVIQA 60

Query: 61  LDGEMRNAVCIFYLVLRALDTLEDDMTISVEKKVPLLHNFHSFLYQPDWRFMESKEKDRQ 120
      LDGEMRNAVCIFYLVLRALDTLEDDMTISVEKKVPLLHNFHSFLYQPDWRFMESKEKDRQ
Sbjct: 61  LDGEMRNAVCIFYLVLRALDTLEDDMTISVEKKVPLLHNFHSFLYQPDWRFMESKEKDRQ 120

Query: 121 VLEDFPT-----YCHYVAGLVG 137
      VLEDFPT YCHYVAGLVG
Sbjct: 121 VLEDFPTISLEFRNLAEKYQTVIADICRRMGIGMAEFLDKHVTSEQEWDKYCHYVAGLVG 180

Query: 138 IGLSRLFSASEFEDPLVGEDTERANS MGLFLQKTNIIRDYLEDQGGREFWPQEVWSRYV 197
      IGLSRLFSASEFEDPLVGEDTERANS MGLFLQKTNIIRDYLEDQGGREFWPQEVWSRYV
Sbjct: 181 IGLSRLFSASEFEDPLVGEDTERANS MGLFLQKTNIIRDYLEDQGGREFWPQEVWSRYV 240

Query: 198 KKLGDFAKPENIDLAVQCLNELITNALHHIPDVITYLSRLRNQSVFNFAIPQVMAIATL 257
      KKLGDFAKPENIDLAVQCLNELITNALHHIPDVITYLSRLRNQSVFNFAIPQVMAIATL
Sbjct: 241 KKLGDFAKPENIDLAVQCLNELITNALHHIPDVITYLSRLRNQSVFNFAIPQVMAIATL 300

Query: 258 AACYNQVFKGAVKIRKGQAVTLMMDATNMPAVKAIYQYMEEIYHRIPSDPSSSKTR 317
      AACYNQVFKGAVKIRKGQAVTLMMDATNMPAVKAIYQYMEEIYHRIPSDPSSSKTR
Sbjct: 301 AACYNQVFKGAVKIRKGQAVTLMMDATNMPAVKAIYQYMEEIYHRIPSDPSSSKTR 360

Query: 318 QIISTIRTQNLPCQLISRSHYSPIYLSFVMLLAALSWQYLTTLTSLQVTEYVQTGEH 374 (SEQ ID NO:2)
      QIISTIRTQNLPCQLISRSHYSPIYLSFVMLLAALSWQYLTTLTSLQVTEYVQTGEH
Sbjct: 361 QIISTIRTQNLPCQLISRSHYSPIYLSFVMLLAALSWQYLTTLTSLQVTEYVQTGEH 417 (SEQ ID NO:4)

>CRA|108000024649260 /altid=gi|12734163 /def=ref|XP_005134.2|
    farnesyl-diphosphate farnesyltransferase 1 [Homo
    sapiens] /org=Homo sapiens /taxon=9606 /dataset=nraa
    /length=431
    Length = 431

Score = 743 bits (1898), Expect = 0.0
Identities = 374/417 (89%), Positives = 374/417 (89%), Gaps = 43/417 (10%)

Query: 1  MEFVKCLGHPEEFYNLVRFRIGGKRKVMKMDQDSLSSSLKTCYKYLNQTSSRSFAAVIQA 60
      MEFVKCLGHPEEFYNLVRFRIGGKRKVMKMDQDSLSSSLKTCYKYLNQTSSRSFAAVIQA
Sbjct: 15  MEFVKCLGHPEEFYNLVRFRIGGKRKVMKMDQDSLSSSLKTCYKYLNQTSSRSFAAVIQA 74

Query: 61  LDGEMRNAVCIFYLVLRALDTLEDDMTISVEKKVPLLHNFHSFLYQPDWRFMESKEKDRQ 120
      LDGEMRNAVCIFYLVLRALDTLEDDMTISVEKKVPLLHNFHSFLYQPDWRFMESKEKDRQ
Sbjct: 75  LDGEMRNAVCIFYLVLRALDTLEDDMTISVEKKVPLLHNFHSFLYQPDWRFMESKEKDRQ 134

Query: 121 VLEDFPT-----YCHYVAGLVG 137
      VLEDFPT YCHYVAGLVG
Sbjct: 135 VLEDFPTISLEFRNLAEKYQTVIADICRRMGIGMAEFLDKHVTSEQEWDKYCHYVAGLVG 194
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FIGURE 2C

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Query: 138 IGLSRLFSASEFEDPLVGEDTERANS MGLFLQKTNIIRDYLEDQQGGREFWPQEVWSRYV 197
IGLSRLFSASEFEDPLVGEDTERANS MGLFLQKTNIIRDYLEDQQGGREFWPQEVWSRYV
Sbjct: 195 IGLSRLFSASEFEDPLVGEDTERANS MGLFLQKTNIIRDYLEDQQGGREFWPQEVWSRYV 254

Query: 198 KKLGDFAKPENIDLAVQCLNELITNALHHIPDVITYLSRLRNQSVFNFCAIPQVMAIATL 257
KKLGDFAKPENIDLAVQCLNELITNALHHIPDVITYLSRLRNQSVFNFCAIPQVMAIATL
Sbjct: 255 KKLGDFAKPENIDLAVQCLNELITNALHHIPDVITYLSRLRNQSVFNFCAIPQVMAIATL 314

Query: 258 AACYNQVFKGAVKIRKGQAVTLMMDATNMPAVKAIYQYMEEIYHRIPSDPSSSKTR 317
AACYNQVFKGAVKIRKGQAVTLMMDATNMPAVKAIYQYMEEIYHRIPSDPSSSKTR
Sbjct: 315 AACYNQVFKGAVKIRKGQAVTLMMDATNMPAVKAIYQYMEEIYHRIPSDPSSSKTR 374

Query: 318 QIISTIRTQNL PNCQLISRSHYSPIYLSFVMLLAALSWQYLTLSQVTE DYVQTGEH 374 (SEQ ID NO:2)
QIISTIRTQNL PNCQLISRSHYSPIYLSFVMLLAALSWQYLTLSQVTE DYVQTGEH
Sbjct: 375 QIISTIRTQNL PNCQLISRSHYSPIYLSFVMLLAALSWQYLTLSQVTE DYVQTGEH 431 (SEQ ID NO:5)

>CRA|18000004929946 /altid=gi|2135096 /def=pir||I38245
farnesyl-diphosphate farnesyltransferase (EC 2.5.1.21),
hepatic - human /org=human /taxon=9606 /dataset=nraa
/length=417
Length = 417

Score = 741 bits (1893), Expect = 0.0
Identities = 373/417 (89%), Positives = 373/417 (89%), Gaps = 43/417 (10%)

Query: 1 MEFVKCLGHPEEFYNLVRFRIGGKRKVM PKMDQDSLSSSLKTCYKYNQTSRSFAAVIQA 60
MEFVKCLGHPEEFYNLVRFRIGGKRKVM PKMDQDSLSSSLKTCYKYNQTSRSFAAVIQA
Sbjct: 1 MEFVKCLGHPEEFYNLVRFRIGGKRKVM PKMDQDSLSSSLKTCYKYNQTSRSFAAVIQA 60

Query: 61 LDGEMRNAVCIFYLVLRALDTLEDDMTISVEKKVPLLHNFHSFLYQPDWRFMESKEKDRQ 120
LDGEMRNAVCIFYLVLRALDTLEDDMTISVEKKVPLLHNFHSFLYQPDWRFMESKEKDRQ
Sbjct: 61 LDGEMRNAVCIFYLVLRALDTLEDDMTISVEKKVPLLHNFHSFLYQPDWRFMESKEKDRQ 120

Query: 121 VLEDFPT-----YCHYVAGLVG 137
VLEDFPT YCHYVAGLVG
Sbjct: 121 VLEDFPTISLEFRNLAEKYQTVIADICRRMGIGMAEFLDKHVTSEQEWDKYCHYVAGLVG 180

Query: 138 IGLSRLFSASEFEDPLVGEDTERANS MGLFLQKTNIIRDYLEDQQGGREFWPQEVWSRYV 197
IGLSRLFSASEFEDPLVGEDTERANS MGLFLQKTNIIRDYLEDQQGGREFWPQEVWSRYV
Sbjct: 181 IGLSRLFSASEFEDPLVGEDTERANS MGLFLQKTNIIRDYLEDQQGGREFWPQEVWSRYV 240

Query: 198 KKLGDFAKPENIDLAVQCLNELITNALHHIPDVITYLSRLRNQSVFNFCAIPQVMAIATL 257
KKLGDFAKPENIDLAVQCLNELITNALHHIPDVITYLSRLRNQSVFNFCAIPQVMAIATL
Sbjct: 241 KKLGDFAKPENIDLAVQCLNELITNALHHIPDVITYLSRLRNQSVFNFCAIPQVMAIATL 300

Query: 258 AACYNQVFKGAVKIRKGQAVTLMMDATNMPAVKAIYQYMEEIYHRIPSDPSSSKTR 317
AACYNQVFKGAVKIRKGQAVTLMMDATNMPAVKAIYQYMEEIYHRIPSDPSSSKTR
Sbjct: 301 AACYNQVFKGAVKIRKGQAVTLMMDATNMPAVKAIYQYMEEIYHRIPSDPSSSKTR 360

Query: 318 QIISTIRTQNL PNCQLISRSHYSPIYLSFVMLLAALSWQYLTLSQVTE DYVQTGEH 374 (SEQ ID NO:2)
QIISTIRTQNL PNCQLISRSHYSPIYLSFVMLLAALSWQYL TLSQVTE DYVQTGEH
Sbjct: 361 QIISTIRTQNL PNCQLISRSHYSPIYLSFVMLLAALSWQYLATLSQVTE DYVQTGEH 417 (SEQ ID NO:6)

FIGURE 2D

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Hmmer search results (Pfam):

Model	Description	Score	E-value	N
PF00494	Squalene and phytoene synthases	425.8	4e-124	2

Parsed for domains:

Model	Domain	seq-f	seq-t	hmm-f	hmm-t	score	E-value
PF00494	1/2	47	126 ..	1	88 [.	124.6	1.1e-33
PF00494	2/2	127	291 ..	146	317 .]	301.1	1.3e-86

FIGURE 2E

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1  TATTTATTCC TAATTAAATG GGGAGGAAAG TCTTTGAAGA GGAACCTCTA
51 CTTTACTTTT TATACCGTCA TGGCTGGAAA CTAAGTTTTT AAGATTTTTT
101 TGGGGTCCCC TTGGCCGAGG TGGGGAGTGG GAGGGCTGTC CAGTGGTAGG
151 GACTTAGGAT TTTTAGTTTA CAGTAGTAGG GGAAACACTC TGTAATCTAA
201 TACATAAGTA AATGATGTAT TAGAATATGG TAAATATAGG CAAGTAGACC
251 CCCACTGGGA TTAGCAGTGG TGGAAATGTG AGAGAGGGCA AACAGGTGGG
301 TCTAGATGAG GTGTGAGCAG ACTCGAGGGG CACAGGAGTT AGTCAAGCCA
351 GTATCTGGGG GATAGTGCAG GAATAGTGAA CAGCTAGACA AAAAGTCCTA
401 GGGCCAGAGA AAGCAAAAGC ATAAGAGATG GAGGCCAGAG AGGTAATCTG
451 GGTGGAAGGC TGCAGCCTCT CAGGATCCCT ATAGGTGCTT TGGCTTTTGT
501 TGGAGAGACA CTGAACAGCT TTGGGCAGTG AACGTACCTG ACAGGTTTCC
551 TGTTTGTTTT TGAGATGAAG TCTCGCTCTT GTCCCCCAGG CTGGAGTGCA
601 ATAGCGCGAT CTCAGCTCAC TGCAACCTCT GCCTCCTGTG TTCAAGCGAT
651 TCTCCTGCCT CAGCCTCCCA GGTAGCTGGG ATTATAGGCG CCTGCCACCA
701 TGCCTGGCTA ATTTTGTAT TTTTAGTAGA GACGCAGTTT CAGCATGTTG
751 GCCAGGCTGG TCTTGAACCT CAGACCTCAG GTGATCCGCC CGCCTTGGCC
801 TCCCAAAGTG CTGGGATTAC AGGCGTGAGC CACCGCGCTC GGCTAGACCT
851 GACAGGTTTT AAAAGGATTA CTGGTTGCTG TGTAAAAACA GACTGCAGGA
901 TGGCTTAGGT AGCCAGTAGG TTTTTTTTTT TTTTGGAGAC GTAGTCTTGC
951 TCTGTTGGCC TGGCTGGAGT GCAGCGGTGT CATCTTGGCT CACTGCAAAC
1001 TCCGCTTCCC GGGTTCAAGT GATTCTCCTG CCTCAGCCTC CGGAGTAGTT
1051 GGGACTACAG GCGCCACCA CCACACTCGG CTTTTTTGTA TTTTLAGTAG
1101 AGACGGGTTT CACCATGTTG GCCAGGATGG TCTCGATCTC TTGACCTCGT
1151 GATCCACCCG CTTTGGCCTC CCAAAGTGTT GCGATTACAG GCGTGAGCCA
1201 CCACGCCTGG ACGGGTAGCC AGTAGTTTCT AGGGCTGGAG AGATCTAGGA
1251 TGAGAGAAGT TTCCACATTC CTGTTACAGG CTCTCTAAGG CTTCAGCTCC
1301 TTTTCTTAGG ACTAAGCTGG ATCTCAAGTA AACACTAGAG AGGGGCGAGC
1351 TGAAGCTCCA GGAGTGTGTG GGGCTCCCTG GGGCTGGATG GCGGTGGCGG
1401 GCAGGCGAGC TGGGCTGTGC TCGGGTGTGT TACAGTAAAG ACGCCAGCT
1451 TGGCGCTGGC CCGGCCTTTT CACGGTTTTA GGCTCTACAG AGAGCGGCTG
1501 CAGAGCTCAC CCGGCTGGCA GGAGCCACCG AGGCCGGACA CGTGGGCGAC
1551 TTATTGACCA AGTGGGGAGG AAGCAGCCCC GCACTGCTCT CCCGACTGCG
1601 GACCACCGTT GGGCTCATGC GCATCATAAG CCCCACCGCC TCACCTCCAG
1651 TCCCCACAGC GTTCGCGCTC CCAGCCGGGG TAAGCGGAAG AAAACAAAGG
1701 CCGGGCTCCA TCAGGGCACC AATCCCGCTC GTCGGCCTCT TTCTCGGCCT
1751 CCAATGAGCT TCTAGGTGT TATCACGCCA GTCTCCTTCC GCGACTGATT
1801 GGCCGGGGTC TTCCTAGTGT GAGCGGCCCT GGCCAATCAG GCGCCCGTCA
1851 GCCCACCCCA CGAGGCCGCA GCTAGCCCCG CTGGCGGGCG AGGCCGGTTG
1901 AAGTGGGCGG AGCGGCGGGC GGGGCGTCGC CGTACTAGGC CTGCCCCCTG
1951 TCCGGCCAGC CCCTCGAAGC ACCTACTCCA CAGGTCCAGC CGGCCGTGA
2001 GCGCCTGGGG ACCGCAGAGG TGAGAGTCGC GCCCGGGAGT CCGCCGCTG
2051 CGCCAGGATG GAGTTCGTGA AATGCCTTGG CCACCCCGAA GAGTTCTACA
2101 ACCTGGTGCG CTTCCGGATC GGGGGCAAGC GGAAGGTGAT GCCCAAGATG
2151 GACCAGGTGG GCCGAGCCTC CCTGCTTGCC CGGGGCGGGG AAGGAGCTCG
2201 CTGGGCGGGC CTCAGGGCCT GAGCGGCCGG GCCCGGATCT GGGGCAAGGG
2251 GCGCGGCGAG CAGGGCCGAC GCCTGGGTGT TCCCGTCCCC CTTTCTCTGA
2301 GCCTTCCCCC TGTAGGGCCC GGGTGGACGC GGCGTCTCTG GCTGACCTGT
2351 CCCTGCCCCC GCAAGCCGCC CTGGGCATGA GCGACTTTTG CGTGGTTCCC
2401 GGTGGTTGCG CTCCCCGTTT CGTCCCCTCC GTGAGCATCG GCGCTTACCG
2451 GTATTTTAAC CCGAGGGTTA CACATCTGAG GCAATGTGGG TGGGTTACGC
2501 GGGAGAGGAC GAGTGAGTTT TTTGGTAAGC GGAATGAACT ATGCAGATAA
2551 CATCACATGA AGGCCGTTTC TGGAATGAAG TCTGACTCCT CCAGTTTCAC
2601 CACCTCTTCC GGAGCTCTCC CGCCTTGCT GCCTTCCATC GCTTCATCCT
2651 CGGTGCTTCC TGAGTTTAA AATCGCCTAT CTACGCTTCC AAGTTCCAAT
2701 GAGTTATCTA ACGTCTATGG ATTAGCTAGG TGGTTGGTGG AAGGTCAGAA
2751 CTTGGTTTTA CTTAGATTTT TATCTGCCTC ATGCCTGTAC TATTTGTTTA
2801 ATGAATGCAT AGGAGGTGTT TTTATTTCAA CAAGAAAATT ATTTCGTACGC
2851 GATTATTGAA TGAATAGACA AATTCAAGCA AGTTCTTCTG GTCTGGACCA
2901 GCCTGGCTGA TTTCTGTAAC TTTTTTGGG CAACAGGACA GTAGCAAATG
2951 TGACTCAGGC CGAGGCTTGA TAGGTGCCTG AACATCGGAG TCTTCTTTC
3001 AGTGTCCATG TGCTTCAGTA AACACACTAG AAAATAAATT TCTGGTTTTT
3051 GTCCCCAGTA GACTACACCC TCATTGGTG TTATTTTCA CGTGCTATCT

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FIGURE 3A

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3101 TTAATACAGG TACATCCTTC AGTCTATTTG TAGAACATTC AGTTTTCTTC
3151 ATCTTTTCTT TGCCGGTGCT ACATTATTTG AATTATTTTG CTACAGAATA
3201 ACTTCTATTA TTTGATATGG CAGATGTCAC TTTTATATAT TAGATATAGC
3251 ATTCATTTAT TTAACAAATA TTTGACGACC AGTTGTATAT CAGATAGTGT
3301 TCTAGGTGCT GGAGGTACAA CAGTGAACAA GCTAGGTGAA GACCTTGATT
3351 TTATAAAACT TACTTTTTAG TGGAAGAGAG ACAATTTAAA AAAGCGAATG
3401 TACAGTTTTT CACGTGGAGA AAAGCACTGC AGAGGAAGAT ACTAGCAGGG
3451 CAAGGGATCT GAGTGCAGTC AGACCTCATT TGGGTCCAGA CTTCATTCCT
3501 CTATGTCTCT TTCCTTTCTA CAGAAAGACT GTTAGAGAAA ATGGTAGCAT
3551 TGGTTTCCTG TTGGGAGGGA AAGTGGGTGG TCATGGTAAG TGGGTAGAGA
3601 AAGACTTCAC AGTATACTGT TTTTGTACAT TTTGAGTTT TTTAAAGCG
3651 AGACTTGAGC TATTCTAGCT CTGATAATAT GGTGCAGTAT TTGTTATGTT
3701 AGTTGTAGTC TTTCTGGGCA GTTTTACAT CCCCATGAGC CGTTAAAAA
3751 ATAGCTGAAC CTTTAATTAG GGGAAATAAA TTGGAAAAAT ACATTTCCCT
3801 TCACTTAACA TTATCTTAGT TTCTCTTTT TTTTTTTTT TTTTTTGAGA
3851 TGGAGTCTTG CTCTGTTACC CAGGCTGGAG TGCAGTGGTG GCGGGACCTC
3901 AGCTAGATGC AGCCTCCGCC TCCTGGGTTC AAGCAATTCT CCTGCCTCAG
3951 CCTGCTGAGT AGCTGGGATT ACAGGCACCT GCCACTACGC CCGGCTGATT
4001 TTTTGGTATT TTTAGTAGAG ACGGGGTTC ACCATGTTGG CGAGGCTGGT
4051 TTTGAACCTC TGACCTCAAG TGATCTGCTC GCCTTGGTCT CCCAAGTGC
4101 TAGGATTACA GCGGTGAGCC ACTGCACCCG GCCTTTTTT TTTTTTTTT
4151 GAGGGGGGGG TCTCACTCCA TCGTCCAGGC TAGAATGCTG TGGCCTGAAC
4201 ATGACTCACT CCAGTTTGA CTTCTTGGC TGAAGCCATC CTCCCACCTC
4251 GGCTTCCTGA TCCCGAGTAG CTGGGACTCC AGGCACGTGT CACCAATGCA
4301 TGGCTAATTT TTAAATTTT TTGTAGACAC AATGTCTCGC TGCATTGCCC
4351 AGGCTGGTCT TGAACCTCTG AGCTCAAGCG ATTTTCCCAC CTCAGCCTTC
4401 AAAGTGCTGG GATTACAGGT GTGAGCCACT GCACCCAAAC AGTTTCTCTC
4451 TGCAAACTAG GAAAAAATT TACGCTTAGC AGATATTGAG GGCTGATTAT
4501 TTCTATCACA GAAGCATTTG GCTATAGAAT TTCAGGGTTT AGTAAACTTG
4551 ATTTACACTG AATTTTTAGG TGCATATCAG TAAATCTACG GGCATATGCC
4601 GCCTGCAAGT TGTGTGGCAT CACCCAAAAG CCGAGAGTAA TGGAAAGAGC
4651 AGGCTGTTAG TAATCAGGCA GATCTGGCTC CTGTCCAATC TAAATCCTGT
4701 TATTTAGACT AATATCTTAA GTCTGTTATT AAGTCCGATT TCTGACGCTA
4751 TTAAGTTAGG TGAACAACCT TGGTAACCTA ACCTCTGAAC CACAGTTACT
4801 TCATCTGTAA AATAGGGATG TATGTATGGT AACGATTTT TAACCACAAC
4851 TTCCCACTC TAAGATGGTC TGAAAAGAAT TTTTGTAGTG TTTGGCTCAG
4901 AATCACTTGG CAGCAAAACC TGACTTGAAG TTGAGGCTTC ATTCATCCCA
4951 CTTAGTATAT TCAAATGTTT TGCTAAAGAA ATAATTATGA GGTGCTACTT
5001 CACACTGACT AGGGTTGTAT ATGCATTTTA TTGCCTATTT TCTAAAACAC
5051 TAAAAATGCT AAATTCTGCC CCAGGTCTTG CCACAGATGT TTCAGTGGAC
5101 TATGGGCCCTG TGAGACCTTA AAGGGTTGAT TGAGTAAGGA TCACAGGTGA
5151 TGTCCGCATT GTGCTTGCCA TGGAGTTAAG TGCTTGATAA ATGGTGGTTA
5201 TCAATCTGAT TATGTAAATT TATGTAAATT CAGTTCTCAA GTTTGTGGTT
5251 TTTTCCCTCT CCTGGAGAAA TCTATTCTAT TTTAAAGTGA GGAAGGCTCC
5301 GTGGAGGGCT GGTAGCTGGT AGCTGTTTAC TTGTGGAACCT TTCAGCCTGA
5351 GGCTGGAGCC CTTCTGGGG AGTCTGGTCT TGTCGTCTTC CTGACCACCC
5401 CCACACCTT CCTCTAAATT CCCTCCATCC CTGTTTTTCT CCCGCTTGCG
5451 AGCTTTTGGG AGTGTGCTGA ATCTCAGACT GCAATAGATA AACCCAAGAG
5501 GGACAGGCAC CAGTAGCCTG AGCTTGCTTT CTCCCCTGGC TCATGGGAAT
5551 CAAGCAGTAG AAATTTTTAG TGAGTGTGT TTTCCATAGT ATGCTTACTA
5601 GTTGTGTCTT CTGTTTTGT TCTTGGTGAT TTGAAGAAAC CTGTTTACAA
5651 GGTAAGGGAC TGAAACAAAT AGGTGACAGG AAAAAGAGCA GCAGGGGTAC
5701 GAGCTGGAGG AGTAAGTGGC TTGGCTTGCT CTCTTTCAGA ATGGAGGGCT
5751 GTATGGAAAG GAGGGTAGT GTTCTTGAAG AGTGTGGGG TTTAAATCTA
5801 GGGGGACCGT GTCTTGGCAT TGATTGAAAC TCCTGGCTTA ACATCACCCC
5851 GAACTGTGA GTTGGACTGA ACATGACATT TGGCAGTGCA GTTAAAAACA
5901 CTTCTGCTG TAGCCTGGTA ATGGTCAGGC TATGTGAAGA GCTGCTCTGG
5951 AGCTCAGTCC AGAGCGGGTA TTCTGTTTCT TTCACTCTGA AATCCTGCCT
6001 CTCGATATTT TGAGAAGGAA GGAGTTGGTG AATTGTTTTT AAATCCTCGA
6051 TGAATGTCTT CATTTATTCA TGACACCACT TCTGAATATA TTTATGTGCC
6101 AGACGCTGAA GTTTACTAAT ATTATGGTGC CCAGTAAATA CTTGTTTTTA
6151 CTAATATTTT TTATGGCAAT AAAATGACTT TTTCAGGATT ATGTGATTTA

```

FIGURE 3B

Docket No. CL001201DIV
Application Serial No. 10/644,021
Inventors: Ming-Hui WEI et al.
Title: ISOLATED HUMAN ENZYME PROTEIN...

6201 AAAGATTGAC CCTTTTGGCA AAATACGTAT TCATGATAGG AAATATATAC
6251 AACATAGTTC ACTTAAACCT CCCACCAGAG CCCAGGGTTC ACTGTTACCA
6301 TTCTGAAGTG ACTGGAATTT CCTAGAAGTG GATATGCCAT ATTTTTTTAA
6351 CCACTCCTAT TGGATATTTG TTTTTTATTT TTTTGAGATG GGGTCCCACT
6401 CTGCAGTGTA CAATATCATA GTTCACTGTA ACGTGTATCT CTTGGGCTCA
6451 AGCGATCCTC CCCACCTCAG CCTCCCTGAG TAGCTAGTCT TCAGTAGCTA
6501 GACTATAGGT GGGCGCCACC ACAGCTGGCT TTTTAAAAA TTTTTTATGA
6551 ACACGAGGTC TCACTATGTT GCCCAGGCTG CCCTCAAACCT CCTGGGCTCA
6601 AGTGATTCTC CCACCTTGGC CTTCCGAAGT GCAGGGATTA TAGGCGTGCG
6651 CCACTGCACC CGGCCCTGTT GGATAAATGA TTCCAGTCTC TCCCAAAAAG
6701 AACTGTTGTA AGACTGTGGG GTGAGGGGAG GGAAGGGACA AATAGGAACC
6751 CGCCGTATTT TCCACTCCCT GTGGGCCTAA AACTGCTCTA AAAAATAGTC
6801 CATGAAAAAA TACATAGTAC AAACAGCAAC TCTTTCTGAT ATGCTTGCA
6851 TTAAATCAG GCTTTTTTCTC CTTTTTGGAA AAACACAGTC CTTGTTTGCT
6901 TTAGGGAAGA GTAAAGGTCA GTGCGCTGCA TTGCATTAAT TTCGAAGGGA
6951 AAGATGAGAA GACATCTTGA AAGGAATGGC TGGCTTTCTA GAGAATAGTA
7001 GAGGCTTAAT AGGTGTCATA GAAAAACCAG GGTTGGACAG TGGTAGTAAA
7051 ACGGCAAAAC AGATTTTATT CAGAAAAACT ACTGCAGTAA GAGGAGAGAG
7101 ACCTCGGTAC AGAACTGCTC CACTGCGAAT ACAAAGAAAA GTAGGAATTG
7151 ATGGCGGGGG AGCCGGATGT CAGTGGATGG AAAATTATTA CGAGGAAACA
7201 CAGGGGTGTG CATCTTGCT GAAGGCAGCG CAGAGTTATC AGACATCACC
7251 TGAGGGATGG AGGGGGATGT GGAACCTAAT CGGCTGTCTA GGGTGATCAG
7301 ATACTGAAGT TGGGGGATTC TGGTCAAATC AATTTAGCAG GATTCTTGGT
7351 AAAACTGGGC GATGCAAAGA CAGATGCGTT GAGTACAAAG TCCAGGCTTT
7401 ATTGGGAAGA GGATTTACAG GGAGCCCGAG TAGAGTTTGG TCTAGGGAGA
7451 CTCTGTCACT GGGAGGACGA GCGAGCCGCT CGGAAGTGCG CTGGGTTCCTC
7501 TTAGCGGCCA GTGGGTCTG GTGAGAAGGG CAACAGCGGG AGGAGGCGCC
7551 GGTGCGGAGC GGGAGGCCGG GGGCGGGGCT GCGGGGCTGC GGGGCGGGCC
7601 CGTTGTGGGT CGGCCAGCG CGTATTCGAG TAGAGGGCGA GCGCGTCCCG
7651 CCTCTCGTCG GCGCTTCCC AGATCTGCTT GAGTCTATGG AGGAAAAACT
7701 CCGCGGGGTC CGCGATTCCC ATGGCCCGAG CCGCCTGCGG CACCAAGGCC
7751 ATGGCCCTCT TCAAGCGCAC CTTGGTGCTG AGTCCCGCCG CGGCGCCCAG
7801 GGGCCCGGGC GCAGGCACCG CCCCAGGGGG CTGCTGCTTG CCTCCTGCCG
7851 CCTGGCCCTG CAAGGACTGG CCTCGGGGAG AGGGCGCGAC GCTGTGGAGC
7901 CGCCTGCCCC AGTCCCAGTC CCACTCCAC TCCCACTCCC ACTCCCACTC
7951 CTGCTCCTCG ACGTCTCCCA CCGCCGTGTG TGTGTCTGC CCGCAGGACT
8001 CGCTCAGCAG CAGCCTGAAA ACTTGCTACA AGTATCTCAA TCAGACCAGT
8051 CGCAGTTTCG CAGCTGTAT CCAGGCCTG GATGGGAAA TGCGGTGAGT
8101 GATGGAGGCA GCGCCTCTGG CTTGGAGGAA AGCTTGTCG GGACTTTTGA
8151 GTGTGTGGA AGCTACCTTT TGATATAGCG CTCAGCGTTG CAGCCTCGTT
8201 GCTGTGGCTT ATCCAGAACA TAGCCCGGCC CTACGTGTTT ACTTTAGAAA
8251 GCCCTTCCAG GCTCTTTGCC ATCTAGTAGA GTCCCTGCGG GCCCAGCCTT
8301 TCAGAGAAGG GGGGGGAGGG GGTGATGTTT ATTAACTTT TTTAGTCTTG
8351 GCAGCTGAAC CTGCCTGTGA GCAGGTCGTG TATTTCTCGG CTTCCCTTAT
8401 CCAACTTTGC ATTTCTATTT CTAGCATATT GGGTTGATTC TTTTGAAGCT
8451 GCCTCTGTGC ACATTACACC CATGAACCTA GACCAGTTGC CTTTATGTAT
8501 GATCGTATTT ATACTGAGAA GTTACTGTGT TTTTGTGACTT TCTTTTCTAT
8551 TTGCTACATA TTAGTTCGGT CTAAACGTTT GGTCTTCTGG TCTCCATAGT
8601 TCTACATTGG TTAAATGCAA CTCACTTCTG GGAGTAGTGG TGACATTCAA
8651 CTAGTAGGCT TTTTAATAAA CTACAGAAGT TCATTACTCT CATGTAAGGA
8701 AGGAAAACCTA ATGTAACCTT CGTTAAGTAT GAAAAGCGTT GGATATCCTT
8751 ATAGTTCTTT AGAGTTAAGG GTGAGATGGG TTTAGAAAGT GGCCAGGCAC
8801 AAGTTATTTT AAAATAAAAA ATCTTTGGCT GTTTGTTCCT ATATATTAAT
8851 AGTTTTCCCT TTTTACAGC AACGCAGTGT GCATATTTTA TCTGGTTCTC
8901 CGAGCTCTGG ACACACTGGA AGATGACATG ACCATCAGTG TGGAAAAGAA
8951 GGTCCCGCTG TTACACAACCT TTCACTCTTT CCTTTACCAA CCAGACTGGC
9001 GGTTTCATGA GAGCAAGGAG AAGGATCGCC AGGTGCTGGA GGACTTCCCA
9051 ACGGTGAGTG GGGTTACGCA TCTGTCTAC GGACTGTTGT GTTCATAATT
9101 GCTAACGTGG TTGTCCGGTA GCCTCCATAC ATGTGGAGAA AGGTTAAATA
9151 AGCATTTCTGA GGGCAGCATA ATGTGAGGGT TAAAACTCC GGTAGCCCAAG
9201 ACTCTGAAGC CAGGCTGCCT GGGTTGGAAT CTCAAATCTC CCACTTACTA
9251 AACTGTTGGT TACTTACAAA GACTCTCTGT GCCTCAGTTT CTTTCTCTGT

FIGURE 3C

Docket No. CL001201DIV
Application Serial No. 10/644,021
Inventors: Ming-Hui WEI et al.
Title: ISOLATED HUMAN ENZYME PROTEIN...

9301 AAAATAGGGG TAATAATAAC ACCTACCTCA TGGTATTCTG AGGATTCAAA
9351 GAATTAACGT AGGTAATGCT CTTAGAATGT TAGCTACTGC TGTTATTATC
9401 AGTATTGGAA GTCCAGTGT TCTTCCTGTG GGAAGACGCA GTCAAATTTT
9451 AGTGTGTGA AAGATTCTCA GGCTAGCTCA CAAAAGCCTG CCGACTGTAT
9501 GATGCAGCCT ACCTGTAACA CTGCTGGCCT CTTGACTACC CGGAGCCTGG
9551 TAGCATGGGA CTGCTGCTCA CGATGGGCAG CAGCCTGGCA TGGGGGCGGT
9601 GTCTGTTGGC AGCTAGGGCG AGCCTCTGCC ACTTCACCTG TGATCCTGGG
9651 CAAGTTCCTT ATCTGCTTTG TGTCTCCGTC TCCTCGTTTG TAAAGTTAGA
9701 GCTGAGAGGA TTAATTTTCGC ACATATAAAG TACTTAGTGC CTGGTACAGG
9751 GTAAGTATTC TGTAAGTATT AGCTATTTGG TCTATTTTGT TGGAGTAAAG
9801 TGGGTTATAG TTAAAATCCT AAGATTTTTA AAGTCCCTCA AGTTCACGTG
9851 GACATCTGCC TAGGTCCTAC TATCCTAGAA TTCGCATGTC TTATCACACA
9901 AATAACTGAT TCTTCCATAT CTTATAAATA AAGGTTTGAT TTAGCAAAGT
9951 CACATGTTGT GTAATAGCTC GAAGAAGCCC TTTTGTCCA CAGTTGCCAG
10001 AGCTTTTGA GAACAGTCCT TATGTTATTG AAACAAACCT AATCTGTAGC
10051 TGAGTTGGGA GGGAGCTAAG TGGACAGAGA GTCCTCCACC CAAACAAAAG
10101 AATCTTTGAT TCTTGGGCAT AATGGGAGCA ATATTAAAAA AAAAAAAAAA
10151 AAAAAAAAAA GGAATGTTTG GGAAGACTC TTGCGGTGCA AAGGCTGTTT
10201 CAGATTGCTG AGATCAGACC TTAAGTACCA AAGCCCAAAT ATAGTACAAC
10251 ATAATACAAA TGAGAAGAAA ATAGCTGAAG AATAATTCGA GTTTATACAG
10301 TACAATTCAA GAGAAGAAAG AAAATTTATG ACGACTAGCT GGGTGAGAAAT
10351 TAGAACTGTA ACCCTGGGAA GGTCTGGTG ATTTGACTCT CACAGGACAC
10401 CTGATGACCA GAGGATGGGT TTCCTTTGAT GGGAAATCTG TGGCGATTCA
10451 TTGATGGGCC TCTGAATTCT GCTGAAGCAG AGGAAGTAGT AATACCCCAT
10501 TTATAATGGA AGTGCATTCT CACTTAAAAA CAACTAATAT TATTCTAGCT
10551 GGACCTAGCC TCTAGAAACA GCCAAATTAC ATTTGACTTG AGTGGATTCA
10601 TAATAATTAA AAAATTTCTG GGGCATGGGA TAAATGTGTT AGGTATTGCT
10651 AAGTCAAGGC AGCCCTATCC CCTCAGCAGA AGTGAGGGAA TATGAAAGTG
10701 TGTGAATGCT AACATAATTT TGGGGAATAT CGCCGTCAGA TTTCCAGATG
10751 ATATTCCAAC ATGTTTGTGA AACTTCAGTG TCTTCCTGTG TTCATACAGT
10801 GTTCCAGTGG AAAAATAATG CTTAGTTCTG GAAGGTTTCA GATGTGAACA
10851 CTGAACTCAT CGTTTTCTTT TTTGGGTAGT AGAGTTAGAG ATTCATCCT
10901 CTTGAAAGCA CAGTTGCCCC GGAAGAGTA AAAGGGAGCA GAAGGCGTAA
10951 GCCAGGCACG GCTGTTTTCA CTGTTGTTC CTTTGTAT CTTACGAAT
11001 ATGAAGATGT ACTAAGTTGT GTGTTTTCG TGCATATATA ATTTTAAGCT
11051 ACTTGAGTTG TAGGTCCCTC CAGTCTGTGA TTCAGTTTGA GATGGGACTG
11101 TATGGGAATT AACAGTGCCT TGTCTTCTTA AGCAGTGATT TGTGTATGTG
11151 CTGATATAGC TCAGTATGTC TTTGAAACCA GTTGCTCGGG GCTAGGCCTG
11201 CAATCAGCTT TTGGCTAAGA GGTCCCAGGA TGGACAAGT AGTGTGAAAG
11251 AGGACTGATA CCTTGGCCTC ACACACAGTA CTGCTTTAG ACTGGGGCAA
11301 GTGAACTCC TCACTTCAGA GTGCCCCATT CTAGGCCCCC TCACTCCCAA
11351 AGGGGTGAGG GATCACTGGG GCCATGGGAA TGTGCTTGTT CAGCTCTCGT
11401 GGGCTCTCCT TCTGTACCAC GTTCTGGACA TCTGGAGTTC CTTGCCCCAA
11451 ATCCCTGAGC CCACGTCTGC GTCCGCACAG TCTATTTCCCT AAGGTCAGTC
11501 CATCTCCTCC AGGTGGGAAC GTGCCACCAT TGAAGTGCC CTTGGGCCTG
11551 AGTGATGGCC AAGGGCTGTG TTGGGGAGTG TTGTGGATGG ATCCTGGCAC
11601 CGAGGGCTGG GATATCCTCT CAAATGAATG TGAGGTGCCT CCCAGTGCTG
11651 GAGAGAGCGG GATTACAGGA GCAGTGAAG GGAAGAGCCT GGGATATGGG
11701 GATCAGCTGT CTGTGCCCTG CTGCATTCTG GAATAAAACT CTGAGGGACT
11751 AAGAATTCTA AATTCAAACC TGAATCAACC AGGTGTTTAC AAAGATAAGT
11801 TTGTCAGTGC AGGAGGATAC AATATATTTT ACTTAAGTTA CTAGCTCGAT
11851 TGATCATTTT TAAATTTTTA GCTACATATA GTATGTGGGC CTCCATTTGT
11901 CCTCTTATCC CAGGCCCTGC AGAATTTAGG AATAAGCCTC AATACAGTGT
11951 TCTAACCCAG TGACTTCGCG CTCGATGTAC AGTAGATTGA ACCTGATCCT
12001 TTATACTTTA GTGATCATTA GTTGATACCA GTTCAAGTCA GGCTTTCTAG
12051 AAATCTCATT GTATGTTAGG GGTTGATTA GAGTACAGTC ATGCATCACT
12101 TAATGAATGG CCACAGGATA CATTCTGAGA AACGCATTGA TAGATGATTT
12151 CATCATCTG TGAACATCAT AGAGTGTACT TACACATACC AAGATGGCAT
12201 AGCTACTACA GACGTAGGCT CTGTGGTACA GGCCATTGCT CCAAGGCTGC
12251 ACATCTCTAC AGGATGGTAC TGTACTGAAT ACTGTAGGCA ATTGGAGCAC
12301 AGTGGTAAGT ATTTGTGTAT TTAAACATAG AAAAGGTATA GTAAAAACAG
12351 GGTGTTACAG TCTTAAGGGC CCACCATTGT ATTTCCAGTC TCCGTTGACT

FIGURE 3D

Docket No. CL001201DIV
Application Serial No. 10/644,021
Inventors: Ming-Hui WEI et al.
Title: ISOLATED HUMAN ENZYME PROTEIN...

12401	GAAACATCAT	TATACAGTAC	ATGAGCACGT	ATCTTTCTCA	CCTGGTACTA
12451	GTGGAAAGCT	AGAAGGCTTA	GAAGTCTACC	TGTAAACATA	GCTTAAGTAA
12501	TAATACAGCC	TTATTTTTTAA	ATGATAATAG	CAATAATAGT	GTTCACTTAT
12551	TGAGCATTTC	ACTATGAGTT	ACTTACTAAA	TATATTTTCAT	CGTTAATTTA
12601	CTCTTTGTGT	TATTTGATCT	ATAACATCGT	TTAACAGGGA	AATTACCTAG
12651	TACATAATGT	ACTGTTATCT	ACATTTTATC	TAGATGAGGA	AACTGAGGCA
12701	CAGAGAAATT	AAGTACTTTG	CCTAGGATTA	CCCGTGAAGT	TAAGTGACAG
12751	AATCAATGAA	TCTGGAAGGT	CTGGCTTCAG	ATCTCTTGTG	CTGAGTCACT
12801	CGCATACTTT	ACTACCTCTA	AGGTTTCTAA	TCAGAGGAAT	TTGTATCTGT
12851	ATTCCCTGCT	ACTCTTACCC	TCTATGTGGG	ATTTGGCCTT	TCTCCATTAT
12901	CCCTGTGAAC	TCGCTCTGGG	ACCTTCCTTC	TTGTACTTGG	AACCATCAGA
12951	AAGTGATCTG	AGAACATAGA	AATCTACTGT	GTTGTGAAAC	AGAATTACCT
13001	GGAAGCGGAA	AAAGCCCTCC	TGGCTCAATT	CACATGTCAC	GGCTTATGGT
13051	CGTATCCGGG	GAACATATGA	AACTGGGCAC	TGAGTGCGGA	GTGAGGAAAG
13101	CCCTGTCCAT	CCTCTGGGTT	TCTGGGGAAA	ACGTGGACCC	CTTCATTGTC
13151	ACTTTCTCCT	GTATATTTT	GTTTTTACTT	TTAGAACTGT	ACAATTACGT
13201	AATAAATAAT	AAAAAGTCGT	TGGAAGGATA	GGTGAAGTTC	AGAAGTGAAA
13251	GTGTTTTTGA	GGAGTCTAAG	CTCCTTCCCA	CCCTCATTGA	CCTTTCCTCT
13301	CTAATAAATA	GAAGTGGTCT	AACCAAGGAT	CTGTGGAATG	AGCAGAGTCC
13351	AACGGAGATT	CAGGGATTCT	AATAACCTCT	TGTAGAATCA	CTGGTTTGTT
13401	TCAGCCACAA	GAAGGAATTA	CCTTTTGACA	TTGGCTTGAA	CAGCTGTTGT
13451	GCAAAGAAAA	ACTTTTGGGA	AAGTCTGGGA	AGTACCAGAT	TGATTTTATA
13501	GGTTTTTTTT	TTTTTTTTTG	GAGGGACATG	GGGGTATTGA	CAGTTGATGT
13551	TAATCAGAAA	TCCTAAATTA	TGTGTATTCC	TGGTATGTTG	CAATCAGCCG
13601	GCCACCTGGT	TTTCCTCTGG	GCTCTTAATT	TTAGGTGTAT	TCCGAGGAAG
13651	TTTTTCTAAC	TTTTCTGTAA	ACACAGACCA	GGTATATTGC	ATACTTTCAA
13701	TGTTTAACCA	AATCTCTTCA	CTGTTTGCAG	TATTATCTGT	AGGCTCTCAT
13751	GTTTTTAAGAC	TTCCCCATGG	TGTTTTTGTA	TTGTATTTTG	CTAACCTATA
13801	AACAATTCTT	TGAAGTTAAA	ACAAGATATT	TGGGCAGTAA	CAATAAATTT
13851	TAAAAACATC	AATTCAACTT	TTTTACATTA	GGGCTTGGAC	TATGGAAAAA
13901	GTATTGGGCA	GCATGCCTCA	TACTGAGTTG	TTTAATGAAT	TTAAAAGTAT
13951	AGCCNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN
14001	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN
14051	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN
14101	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN
14151	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN
14201	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN
14251	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN
14301	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN
14351	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN
14401	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN
14451	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN
14501	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN
14551	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN
14601	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN
14651	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN
14701	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN
14751	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN
14801	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN
14851	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN
14901	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN
14951	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN
15001	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN
15051	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN
15101	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN
15151	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN
15201	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN
15251	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN
15301	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN
15351	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN
15401	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN
15451	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN

FIGURE 3E

Docket No. CL001201DIV
Application Serial No. 10/644,021
Inventors: Ming-Hui WEI et al.
Title: ISOLATED HUMAN ENZYME PROTEIN...

15501 NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN
15551 NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN
15601 NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN
15651 NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN
15701 NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN
15751 NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN
15801 NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN
15851 NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN
15901 NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN
15951 NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN
16001 NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN
16051 NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN
16101 NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN
16151 NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN
16201 NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN
16251 NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN
16301 NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN
16351 NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN
16401 NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN
16451 NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN
16501 NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN
16551 NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN
16601 NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN
16651 NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN
16701 NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN
16751 NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN
16801 NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN
16851 NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN
16901 NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN
16951 NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN
17001 NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN
17051 NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN
17101 NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN
17151 NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN
17201 NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN
17251 NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN
17301 NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN
17351 NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN
17401 NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN
17451 NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN
17501 NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN
17551 NNNNNNNNGGT GGAGAGTTCT GTAGATGTCT GTTAGGTCTG CTGGGTCCAG
17601 AGCTGAGTTC AAGTCCTGGA TATCCTTGTT AACCTTTTGT CTTGTTGATC
17651 TATCTAATAT TGACAGTGGG ATGTTAGACT CGCACACAAT AATAATGAGA
17701 GACTTTAAGT CTTTTTCTAG GTCTCTAAGG ACTTGCTTTA TGAATCTGGG
17751 TGCTCCTGTA TTGGGTACAT ATATGTTTAA GATAGTTAGC TCTTCTTGTT
17801 GAATTGATCC CTTTACCATT ATGTAGTGGC CTTCTTTGTC TCTTTTGATC
17851 TTAGTTGGTT TAAAGTCTGT TTTATTAGAG ACTAGGATTG CATTCCCTGC
17901 TTTTTTTTTT CGCTTGGTAG ATCTTCCTCC AGCTGTTTAT TTTGAGCCTA
17951 TGTGCATCTC TGCACGTGAG ACGGGTCTCC TGAATACAGC ACAGTGACGG
18001 GCCTTGACTG TTTATCCAAT TTGCCAGTCT GCGTCTTTTA ACTGGGGCAT
18051 TTAGCCCACT TATATTTAAG GTTAATATTG TTATGTTTGA ATTTGATCTG
18101 TCATTATGAT GTTTTGCTGGT TATTTTGCCC ATTAATTGAT GCAGTTTCTT
18151 CCTAGCCTCG ATGGTCTTTA CAATTGGCA TGTTTTGCA GTGGCTGGTA
18201 CCAGTTGTTC CTTTCCATTT TTACTGCTTC CTTCAGGAGC TCTTTTAGGG
18251 CAGGCCTGGT GGTGACAAAA TCTCTGAGCA TTTGCTGTGC TGTGAAGGAT
18301 TTTATTTCTC CTTCACTTGT GAAACTTAGT TTGGCTGGTT ATGAGATTCT
18351 GGGTTGAAAA TTCTTTAAGA ATGCTGAATA TTGGCCCCCA CTCTCTTCTG
18401 GCTTGTAGGG TTTCTGCTGA GAGATCTGCT GTTAGTCTGA TGGGCTTCCC
18451 TTTGTGGGTA ACCCGACCTT TCTCTCTGGC AGCCCTTAAC ATTTTTCCT
18501 TCATTTCAAC GTTGGTGAAT CTGACAATTA CGTATCTTGG GATTGCGCTT
18551 CTCGAGGAAT GTCTTTGTGG TGTTCTCTGT ATTTCTGAA TTTGAATGTT

FIGURE 3F

Docket No. CL001201DIV
Application Serial No. 10/644,021
Inventors: Ming-Hui WEI et al.
Title: ISOLATED HUMAN ENZYME PROTEIN...

18601 GACCTGCCTT GCTAGGTTGG GGAAGTTCTC CTGGATAATA TACTGAAGAG
18651 TGTTTTGTAA CTTGGTTCCA TTCTGTCTAT CACTTTCAGG TACAACAATC
18701 ATAGCATTGG TCTTTTCACA TAGTCGCATA TTTATTGAAG CCTTTGTTCA
18751 TTTCTTTTCA TTCTTTTTTC TCTAATCTTG TCTTCTTGCT TTATTTCATT
18801 AATTTGATCT TCGATCACTG ATATCCTTTC TTCTGCTTGA TCGAATCGGC
18851 TATTGAAGCT TGTTTATGCT TTGTGAAATT CTGTACTTTT GGTTTTTCAGC
18901 TCCATCAGGT CATTTAAGCT CTTCTCTACA CTGGTTATTC TAGTTAGCCA
18951 TTTGTCCAAC CTTTTCTCAA GGTTTTAAAGT TTCCTTGCGA TGGGTCAAGAA
19001 CGTGCTGCTT TAGCTTGGAG AAGTTTGTTA TTACCAACCT TCTGAAGCCT
19051 ACTTCTGTCA ACTCGTTAAA CTCATTGTCC ATCCAGTTTT GTTCCTTTGC
19101 TGGTGAGGAG TTACGTTCTT TTGGAGGAGA AGAGGCGTTC TGTTTTTGGA
19151 ATTTTCAGCC TTTCTGCTGT GGTTCCTCCC CATCTTTGTG GTTTTATCTA
19201 CCTTTGGTCT TTGATTTTGG TGACGTACAG ATGGGTTTTG GTGTGGGTGT
19251 CCTTTTGTGT GATTTTGTAT CTATTCCTTT GTTTGTAGT TTTCTTCTA
19301 ACAGAGGCCG GTCAGCTGCA GGTCTGTTGG AGTTGCTGGA GGTCCACTCT
19351 AGACCCTGTT TACCTGGGTA TCACCAGTGG AGGCTGCAGA ACAGCAAATA
19401 TCGCGGCTG ATCCTTCCTC TGGAAGCTTC GTCCAAGAAG GACACCCACC
19451 TATATGAGGT GTCTGTCGGC CCCTACTGGG AGGTGTCTCC TCCCAGTCAG
19501 GCTACATGGG GCTCAGGGAC CCACTTGAGG AGGCAGTCTG TCCGTTACTG
19551 GAGTTCAAAT GCCGAGCTGG GAGAACCACT GCTCTCTTCA GAGCTGTCAG
19601 GCAGGGATGT TTAATCTGCG AGAAGCCGTC TGCTGCCTTT TGTTTAGATA
19651 TGCCCTGCCC CCAGAGATGC AATCTAGAGA GGCAGTAGGC CTGCGGTGG
19701 GCTCCACCCA GTTCAAGCTT CTTTGTGCTT TTGTTTACAC TGTGAGCATA
19751 GAAGTGCGTA CTGAAGCCTC AGCAATGGCG GGGAGGCGCT TCCCCTCACC
19801 AAGCTCCAGC ATCCCAGCTT GATCTCAGAC TGCTTGGCTA GCAGCAAGCA
19851 AGGTTCCATG GGCATGGGAC CCCCCGAGCC AGGCACTGGA GGCAATCACC
19901 TGCTCTGCCA CTGCGAAGA CTGGGAAAAG CACAGTATTT GGGCAGAGTA
19951 TACTGTTCTT CCAGGTACAG TCACTCACGC CTTTCTTGG CTAGGAAAGG
20001 GAAATCCCCT GACCCCTTGC ACTTCCTGGA TGAGGTGACG TCCTGCCCTG
20051 CTTTGGCTCA CCCTCCATGG GCTGCACCCA CTGTCCAACC AGTGCCAATG
20101 AGATGAACCA GGTACCTCAG TTGGAAATGC AGAAATCACC CATCTTCTGC
20151 ATCGATCTTG CTGGGAGCTG TAGACCAGAG CTGTTCTTAC TGGGGCATCT
20201 TGGGAAGCAAC TCTGGGTCTG AGTTTCTGTT TGTTGCCCTG ATGTATATCC
20251 CCAGTGGCTA GAATGATACT TGTTACATAG GAAGTGCTTG ATCCATGTTT
20301 GCACAAATGA ATCTTTCTCA TAATGAGGTT TCTCTAAACA AGCTGTTCTC
20351 CCAAAAACCT ACACCCAGCT TTATGTTGAA GCATCTCATT ATACATTGGA
20401 AAGATGAAAT GTGTAGTGAG ACTTTGAATC TTCTTTTGAA TCTAGAAACA
20451 TTAGCATTTT TAGACCATTC TATTTTAATA TTTATGAAAT TTATGAAATA
20501 ATAAGAAACA TGAGGCCGGG CTCAGTGGCT TATGCCTGTA ATCCCAGCAG
20551 TTTGGGAGGC CAGGGCTAGT GGATCATGAG GTCAGGAATT TGAGACCAGC
20601 TTGGCCAAACA TGGTGAAACC CCACTTCTAC TAAAAATATA AAAATTAGCT
20651 GGGCGTGGTG GTGCATGCCT GTAATGCCAG CTCCTGGAGA GGCTGAGGCA
20701 GGAGAATCAT TTGAACCTGG GAGGCGGAGT TTGCAGTGAG CTGAGATCGT
20751 GCCATTGCAC TCCAGCCTGG GCAACATTGC GAGACTCCAT CTCAAAAACA
20801 AAAACAÀAAA CAAAAAAAT GTGTGACCTA AATTAGGCTT ATAGATGAAC
20851 CATTGCAGTC ATGATTAATT CCGCCATTGT TTGCCTTGTG ATCTTTGGTG
20901 CCATGTCTGT ACATATTTCA TGATTCTGTG GTTTTACGG TTTCCATTTC
20951 AGATCTCCCT TGAGTTTAGA AATCTGGCTG AGAAATACCA AACAGTGATT
21001 GCCGACATTT GCCGGAGAAT GGGCATTGGG ATGGCAGAGT TTTTGGATAA
21051 GCATGTGACC TCTGAACAGG AGTGGGACAA GGTTAGTCTC ATAAACAGT
21101 GTCTGTGTGT GATGTATTAG ACAGAGCTGG CAGTCTCAT AGTGAAGCTC
21151 AGAACAAGAA AAGTTGTCCA GTATTTTCAG CCCCTCTGGT TTTACAATTC
21201 ATCTGTTTGA GTTGAATGTC TCATCATAAA CAGTTTATTC CAGAGTTAAT
21251 TCCAAACCAG CAGCTATGTA GGATATCAGC CAGGCTAGGA GTAGGGTACT
21301 GGAGAGAAGT GCTTATCTAG ACAAAGGGAT GTAATTGACC ATGAAGATTA
21351 AAATAACACA TCAAAACATA AGGTAGGGTT AGGAGTCTTG CCTATTTTTC
21401 ATAGGAATGG TGTTTGTGAG ACTTACTCAT CACTTCTGTG GAAGTAAAGA
21451 CATTTTATTT ATTTATTTTA AAGCCAGTCA GATTTAGCAG GCAGAGACAT
21501 TTCAGACATC TAAAGTGTTG ATGTATTTCA TACCTTTAAC TGTGCTTAAA
21551 TTAGGATCTC CGAAAAGATG CTGCTACATG GTCACACTGT TAGTGTAAGT
21601 CCAAGGTCTT GGGCCTCTTA ATTTTTCAAA CCTCAAAACT TGACAGCAGT
21651 TATCTTTGGA ACTGCTGATT TGTGCTTCCT AAGTTAACAG CATACAATGA

FIGURE 3G

Docket No. CL001201DIV
Application Serial No. 10/644,021
Inventors: Ming-Hui WEI et al.
Title: ISOLATED HUMAN ENZYME PROTEIN...

21701 CTGCTAGAAA TCAATTTCTG CATTTAAGGT GAAGTTAGCC GGGTACTATG
21751 GTTTACCTGT AATCTCAGCA CTTTGGGAGG CTGAGGTGGG AGGATCATTT
21801 GAGCCCAGGA GTTAGACACA AGCCTAAGCA ACATAGCGAG ACCCCGCTCT
21851 TCAAAAAATT AAAAAATGAG CAGGGAATTG GTGGCATGTG CCTGTGGTCC
21901 CCAGCTACTC TGGAGGCTGA GGTGTGGGAG GATTGCTTGA GCCCAAGAGT
21951 TGAAGGTTGC AGTGAGCCAT GATTGTGCCA CTGCACTCCA ACGTGGGTGA
22001 CAGAGCAAGA CACCTACTGA AAGAAAAATA AGTTGAAGTT AAAACTTCTG
22051 GCCAAGAACC AGCACTGGTT ATGATAGTAA CTCATTTTCT GTTGTGCAGA
22101 TTTATTCAGG AAACCTAATT TTAGGTTGTT GAATAGAAGT TTTGATCAGA
22151 TAAAATTGAA TTAACAAAAA TTTTTTTTGA GACAGGGTCT TGCTGTTATC
22201 CAGGCTGGTG TGTAGTGGTG TGATCACGGC TCCCCGAGC CTCAACCTCC
22251 TGGGCTCAGG TGATCCTCCC ACCTCAGCCT ACCGAGTAGC TGTAACACAC
22301 GTGCATGACA CCATACCAGG CTCATTTTGT TACATTTTTT GTAGAGAGAG
22351 GGTTTTGCCA TGTGTGCCAG GCTAGTCTCA AACTCCTGGC ATCAAACAGT
22401 CCTCCCACTC TGGCCTCTCA AATGTTGGGA TTACAGGCAT GACCAGCCAA
22451 TTATTTCAAG GAGTTATTTT TTTTCTTCTA CTTTGGGGGA AGATGAATTA
22501 TATAAGTCTC CATTTTAGGA GTATTTCTAC CAAAAGAACT ATTATCTTCA
22551 AATATATTTT TGGATAGTAC TATAGATATA CTAATTTTTT TTTAAATTTT
22601 TAGTAATTCT TTTGAAGATT TTGTATAGCT GTCCAAAGCC AATTTCGTCT
22651 TACCTAATTT CAGCAAGATT TCACTCTTTT CATGTTACTT TTGTCCAGAG
22701 ACAAAATTTCA AGTGTCTTCT CTTACCTGTG GCATTCTTCC CCCTGATTAG
22751 TCTCTGGCTT TGTATTACTT TCAGTCAGAG ACGACTTTTT TTTTTTGAGA
22801 CAGGGTCTCA CTCTGTCACC CAGACTGGAA TGCAGTGGCA CAGACAAGGC
22851 AGCCTTGACC TTCTGGGCTC AAGCAATCTT CCTTGCCCTC AGCCTCCTGA
22901 GTAAGTGGGA CCACAGGCAC GTTGCCACCA TGCCTGGCTA ATTTATTTTA
22951 ATTTTTATTA TTTTGTAGAC AGGGTATTGC TCTGTCACCC AGGCTGGAGT
23001 GTAGTGGCAT GATCAAGGCT CACTGCAGCC TTCACCTCCT GTGCTCAAGC
23051 AGTCCTCTCA CCTCAGCCTC CCCATTAGCT GGGACTATAG GTCCACACCA
23101 CTACACCAGG CTAATTTTTT TAATTTTTTT GTAGAGACAG GGTTTCATCG
23151 TGTTGCCTAG GCTGGTCTTG AGCTCCTGGG CTCAAGCGAT TCACCTGCCT
23201 TAGCCTCCCA GGTGTGAGCC ACTACACTCA GCCTTTTAAA ATTTTTCACA
23251 GAGATGAGGT CTTGCTTTGT TGGCCAGGCT GGTCTAAAAC TCTTGGGCTC
23301 AAGCAGTCCC CTCTCCACAG CCTCCCAAAA TTCCGGGATT ACAGGCGTGA
23351 ACTTCGGTCA TTTCCCTAAT TTTACCTTTC CTAATGACAC TCCAGAGCTT
23401 ACCTTCTTTA CTTTTGCTTC TTAAGTTAAC TAATAGACAA TTATTGTATG
23451 TGGATATTGC ATTAAGTTGT CTTAGGATAC CCTTTTCAGA GGAGGACAGC
23501 TTTTGACAAA TTGCTGTGCG GGAAAAAAA AGTATTGGC AATTAAGAGT
23551 TGCATTTACT GAAATCTCTG TTGAGAGAGG GGAAGTTACG TTGTCTCTAA
23601 AAGAAAAACT AAAAAGAAAA GGGGAAGTTT TAGCAAAGTT GTTAAAGCCT
23651 GACACTTAAG TCATACTACC TAGTTTTGAA CTCTTAGCCC CTGCCACAGA
23701 CACGGCAGCC CCTTGAACCT TCCTGGGTTT AAGCGAGCCT CCTACTTCAG
23751 CCCCCTGAGT AACTGGGACC ACTGGCCTGT GTCAGTGTGC CTGGCTAATT
23801 TTTTTTTTTT CCTCACATGG GCAATGTTGG GCAAGTTAAA TCGACTTCTT
23851 TGTGCCTCAG TTTCCCTCATC TGAAATGGAG ATCATACTGC TATGTACCTG
23901 ATACAATGTT TGTGAGGATT GAATGTGCAG AGTTCCTTTT TTCTGTGTGT
23951 GTTGTTTTGA GACGGAGTCT CACTCTGNNN NNNNNNNNNN NNNNNNNNNN
24001 NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN
24051 NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNA TCTCGTGATC
24101 CGCCCGTCTC AGCTTCCCAA AGTGCTGGGA TTACAGGCAT GAGCCATCGT
24151 GCCCGGCTGA ATGTGCAGAG TTCTTAAAAC CGTGTCAAGA ACATAAAATA
24201 GTTATTGTTT CTTTCATATA ATGATGATTT TGAGGGCCTG CGGATCTTGA
24251 CATGTTATCA GATTGGTCAA AAAAAGATTA AACCATAGTT GGTATTGTCC
24301 TAGTTCCTGT TACCAGAATA TTCCATCTTT CATCGTTGCC TTCTCTCATA
24351 GTTTTATGTA TCAAAAAGTT TATTGTAAAG CTAGGCCGGG CACGGTGTCT
24401 TGGGCTGGTA ATCCCAGCAC TTTGGGAGGC CAAGGCTGGC AGATCAGTTG
24451 AGGTCAGGAG TTCGAGACCA GCGTGGCCAA CATGGTGAAG CCCCCTCTCT
24501 ACTAAAAATA AAAAATTAGC TGGATGTGGT GGTGGGTGCT TTAATTCCAG
24551 CTACTCAGGA AGCTGAGGCA GGAGAAATCAC TTGAACCCAA GAGGCAGAGG
24601 TTGCAGTGAG TTGAGATTGT GCCACTGCAC TCCAGCCCAG GGGACAAAGT
24651 GAGACTTGAT CTCAAAAAAA AAAAAAAGTA AAAGTTATTG TAAAGCTAGA
24701 CACGGTGGTA TTTGCCTACA ATCCCAGCTG TTCGGGAAGC TGAGGCAGAA
24751 AGATTGCTTG GGTCCAGTAG TTTGAGTCTA ACGTGGGCAA ATATATGAGA

FIGURE 3H

Docket No. CL001201DIV
Application Serial No. 10/644,021
Inventors: Ming-Hui WEI et al.
Title: ISOLATED HUMAN ENZYME PROTEIN...

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24801 CTCCATCTCA AAAAAAAAAA TAAAAAATAA AAATAAAAAA ATGTTTACTA
24851 GTTTTTTTCA GTAGCCTTTT ATTATAGTAG CAGTACATGT GTATTGTAGA
24901 AATTTGGAAA ATACAAGTGA AAAATAAAAA CATCAAATTC CCGTCAGCCA
24951 GAGACTGCTG TGAAATGTTT TGAGCACATC CTTCTTGAAT GTTTTTTAAA
25001 TCCTGGTATG TATATTTGTA TTTTAAAAATC AAAATGCATT CTTACCCATT
25051 CTCTTTTGAA CCTGCTTTT TGTAGCTAAT GATCTCTAGT GTGTCCATTT
25101 CAGTAAAAAT TCCATTATTA AAGTGCCTTA AAAATCGTCT CTTACAGTAC
25151 TGCCACTATG TTGCTGGGCT GGTCCGAATT GGCCTTTCCC GTCTTTTCTC
25201 AGCCTCAGAG TTTGAAGACC CCTTAGTTGG TGAAGATACA GAACGTGCCA
25251 ACTCTATGGG CCTGTTTCTG CAGAAAACAA ACATCATCCG TGACTATCTG
25301 GAAGACCAGC AAGGAGGAAG AGAGTTCTGG CCTCAAGAGG TAACAGATTC
25351 AGGGTATTTT GGGGGAAAAT AACTTTAGAC ATTCTCTGAA AAATCCTTTA
25401 ACTCTTGTTG TTGCGGGTGA CAGAAAAACA AGCCAGGCCT CCCCCAGGCA
25451 GCATAAGGGG ATGTGGAAAA TAGGATAGAT TGACATGAGT TTGCTTCAGG
25501 TAGACTGGCT GACTCCAGG ATTCACACCA CGTAATCAGT ATATTCAAGC
25551 CTTGCTGTCC TTGATTTCTT TCAGACGGTC TTTCTCCAAG TGGTGGATAT
25601 GGTAACAACC CACGTGCACT AGCTTAACAA AAAGTTCTTA GGAATGGCTT
25651 TGTTCCGGCT GCGCGAGTGG CTCATGCCTG TAATCCCAAC AGTTTGAGAG
25701 GCCAAGGTGG GCGGATCACC TGAGGCCAGG AGTTCGAGAC CAGCCTGGCC
25751 AACATAGTGA AACCCTGTGT TTAATAAAAA ATACAAAAAT TAGCCGGGCG
25801 TGGTGGCAAG GGCTTGTAAT CCCAGCTACC TGGGAGGCTG AGGCAGGAGA
25851 ATCGCTTGAA CCCAGGAAGC AGAGATTGCG GTGAGCTCAG ATTGTGCCAC
25901 TGCACTCCAG CCTGGGCGAC AGAGTGAGAC TCCCTCTCAA AAGAAGAGGA
25951 AGGGCTTGGT TCTTCTGCTC AGCCCTGAAT CAGTTACTGT TGCTACACAG
26001 CTGAGTTCTC TGGCCTCACC TGGATTACGT CTACACAGTA CACACAGAAT
26051 GGATTTCCCC CAAAGAAAAGA ATTCTGCGGC AGGAAGGGGA AAGGGATGGC
26101 AGGTAGACAA AAACCTCAGG TGTCTGTAAT AAGGGACAGG GTCGATCTTT
26151 AATTAATAACA TGGACAGGGA ACAGAAAGCT TTTGATACTG ATTTTGTTCA
26201 GAAGGAAAGT AGAAAATTTT ATGACTGTTC CCTGAATTTA TTCCAGCATT
26251 TACCTTTTGC TTTCCATAAA AGTGTTCCTT GCAGCCAAGT ACTTTAAAGT
26301 TTTAAAAAGA CGGGTGAGGC TAAGTGTGGT GTCTCATACT TATAATCCCA
26351 GTGCTGAGGC CAGGAGTTCA AGACCAGCCT GAGCAACACA GCAAGATACC
26401 ATCTCTATAA AAAATTGTTA GAAAATGATT CTGCTGAAAG AGCAAAAAATA
26451 AAAATTAAAG AAAGTAGAAA AAATAAAACT AAATTTAAAA GATTAACCTGG
26501 GCATGTTGGC ATGCACCTGT ATTCTTAGGT ATTCGGGAGG CTAAGGCACA
26551 AGGATCCCTT GAGCGCAGGA GCTCAAGGTT GGATTGAGTT GTAATCACAC
26601 CACTGCACTC CAGCCTCGGT GGCACAATGA AACTGTCTCA AGAAAAAATA
26651 AAAGTGACAG AGGGAAACAA TATTTGCAAT TCATAGAGCA GATACAGGGT
26701 TCATATTCCT AATATTAAAA AAAACTTCTA AAAGTTAAGA AAAAGGCCAA
26751 CTGCCCCACA GAAAAATGGG CAAGGAGATA AGAACAAGAT TGTTACAGG
26801 AAGAGACACA CAGATGATTA TTAATAATCT GAAAAGATGC TGAGTCTTAC
26851 TCCTAAGAAA AATTCACATT TAAACTACTC TGGGGGCTGG GCAAGGTGGC
26901 TCACGCCTGT AATCTCAACA CTGGGAGACC AAGGCAGGAA GATCACTGAA
26951 GCCAGGGTAT CGAGACCAGC CTGGACAACG TAGTGAGACC TTATCTCTTA
27001 AAACAAAACA AAACAAAACA AAACAAAAAA AACAGTAAAA ATTGGCCGGG
27051 CACAGTGACT CCTGCCTATA ATCCCAGCAC TTTGGGAAGC CCAGGTGAGT
27101 GGATCACTTG AGGTCAGGTG TTTGAGAACA GCCTGGCCAA CATGGCAAAA
27151 TTCCGTCTCT ACTAAAATTA CAAAAATTAG CCAAGTGTGG TGGCATACGC
27201 TGGTAGGGCC AGCTACTTGG GAGGCTGATG TGAGACTCCA TTTAAAAAAA
27251 AAAAATCAAA AATTAGCTGG GTATAGTGGC ACACCCCTAT AGTTCTCGCT
27301 CCTTGGGAGG TTGAGGCAGG AGGATTGCCT GAGCCCAGGA GTTCAAGGCT
27351 GCAGTGAACC ATGATCACAC CACTGCATTG TAGCAGCCTG GGAGACAGAG
27401 CAAAACCTT GTCTCAAAAC AAACAACAAA CAACAAAAAC AAAAAACACT
27451 TCCCTCAGCT CAGACATGGC CTTTAAAGTT TCCTAGGTGA CTCGTGTGCA
27501 GCCAGGGTTG AGAAACCACT CTTGTCTTAC CCCTCTTTTG CAGACACAGG
27551 GCTCAGAGAA GGAAGGGGA TTGTCTGGGG ATGTATAGTG AGGCAGTGGC
27601 TGCCTTGGA GTGGAGTCTC AGTCTCCCGG CTCCTAGGCC AGCCCTGAC
27651 CACTGTTCCA TTGTCTCCCA GACAGAACAT CAGCCACGGG CATGTGATGC
27701 ATGAGCGTGA GCCACACCAT CTGACACACA CAGGAGCAGA GCCCTGCTCT
27751 TCTCATTCAC TTACTTTATC TGTAAAATAG CATCATTTCT ACCACACGGT
27801 GGTGGTGTGA ATAAAATGAG ATGAACTTCT AGCATAGAGT GCTTAGTAAA
27851 GGTCTGGAC ATTTCTAGT AGTTGAATCA TGCCAAATGT GGTCTAGGT

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FIGURE 3I

Docket No. CL001201DIV
Application Serial No. 10/644,021
Inventors: Ming-Hui WEI et al.
Title: ISOLATED HUMAN ENZYME PROTEIN...

27901 GATTGGCTTC TTTTGCTAGC ATGTTTTTCAG GGCTCCTCCA TGCTGGGGCA
27951 TTGCATCACT GCTTTATTCC TTTTATCGC CTAGTATTAT TCCACTGTGT
28001 GGATAGACCA CATTATATCCA TTCATCAGTT GGAGGATATT TGGGTTCTTC
28051 CCATTTTTTTT TGGCTATGGT GAATAGTACT GTGTACATTT GCATATAAGG
28101 TTTTGTGTAG ATGTGTGTTT TCCTTTTTTCT TGGGTCTATG CTGAGAAGTG
28151 GAATTGCTGG TTCATACAGC AGCTCGAACC TTGTGAGGAG CTGCCAGACG
28201 CTTTTCCAAG GTCGCTCCAC CATTTTACAT TCCCGTCAGC AGTGTGAGAG
28251 TCCCAGTTTC ACCAGCACTT GTTGTTATCT CTTTTTAACT GTATGTATAT
28301 ATACTTAACA TTTTATTTAT AATAAATGTA CATAATAGAG AATTTGCCAT
28351 TTTAACTATT TTTAAGTCTA TTATTCAGTG GCATTAAGTA CATTAATGAT
28401 GTTATATAAC CATCAACACT ATGTTTCCAG AACTTTGCT AGCTTCAGAG
28451 AATCCTCTAA ATAATATCAT TAAAAATCAT CAAGCCGAAT CCCACTGTTA
28501 GAATTAAAGG TTTTATTTCA CTTTCAAGTT ATCAGGATCC AGGGAGGTGT
28551 AATACACTTA GAGGATAGAC TCAGCTCATT TCCCAGCTAT GCCTTTCAGC
28601 AGCATTCTTA CCAGAGTAGG AATATAATGT TAGTCATTAT TTAGAGGCCT
28651 GGCCATCTTG AGAAGGTTTA CTGTTTAGTC TGCAGTACAA TTATAACTGT
28701 TTTTGTATAT TGGGTTATTT TTTTCAGAAG TAGGCCAGTA GCTCTAACAG
28751 GAGCCTCTTT AGCCTGAATT CGTCCAAGTA GTGCAGTGTT GCACTAGTTG
28801 TCCCTCGGGA CATGCTCCCC AATACGTAAC TCACTTCCAG GTTGCAACTG
28851 GACACTTACT GGTAGTCAGA AATAGCTATT GCATGGAGCT TAAAATGAAC
28901 TTGATCTTCT TGAAAGATGA GTCTGCAGCT AAGAGACTTT ACTGTATATC
28951 ATAGTGTTTT TTTTGTTTT GTTTGTGTTT TGTGTTGTG ACGGAGTCTC
29001 ACTCTTTCAC CCAGGCTGGA GTGCAATGGC GAGATCTTGA CTCACTGCAA
29051 CCTCCGCCCC CTAGGTTCAA GCAATTCTTC TGTCTCACC TCCTGAGTAG
29101 CTGGGATTAC AGGCGCCTGC CACCGTACCC GGCTAGTTTT TGTATTTTTA
29151 GTAGACACAG GGTTCACCA CCTTGGCCAG GCTGGTCTTG AACTCCTGAC
29201 CTCGTGATCC ACCCTCCTCG GCCTCCCAA GTGCTGGGAT TACAGGCGTG
29251 AGCCACGGCG CCCAGCCTGT ATCATAGTTC TTATGCACAA AGACCCTTTA
29301 ATATTGTTTG TAAATTCTCC CCTATGCACA CGCTGACCTG TTCCTTAATC
29351 TTCTTATCTG TCTAGGTTTG GAGCAGGTAT GTTAAGAAGT TAGGGGATTT
29401 TGCTAAGCCG GAGAATATTG ACTTGGCCGT GCAGTGCCCTG AATGAACCTA
29451 TAACCAATGC ACTGCACCAC ATCCCAGATG TCATCACCTA CCTTTCGAGA
29501 CTCAGAAACC AGAGTGTGTT TAACTTCTGT GCTATTCCAC AGGTAGGGAA
29551 CGGGGCTCCT CTGGGTGGAT ACGGGGCTAA AGGGAGTGAG GTAGGAGTAA
29601 GGGTGGATTT TGCTGTGCTA TATTCAAGGA TATGATTCTT TAAAAAGACG
29651 ATGACTCCAG TTTATTACGC TGGGAGTTTC ATAGCACCCG CCTTTGCTTC
29701 CAGCCACCAA ACTCAGCTCA GCCTTGAGGT TAAGCCTGCT CCTTTTCAGA
29751 ACCTTCTTTC CGGATTTACT ATTTTCTACA GCTATCCTAA ACTAGTTAGG
29801 TTCTTTTCTT CACAGTTAAG TCAAGGTCTT TGGCTTAGAT TTATGGGGAG
29851 TGCTGGGTAA AACCTGGGTG AAGCTGTTAT CATTAAAAAG TCTTCATTAA
29901 GCACCTAATT ACTGCTGTCC TTTTCCTAGA CCCGGCATAA AAAGAACCTG
29951 GTCCGGTAGA CCTAGCCTCT CAGTATGCTA GGAACCTACA CTTTTTAGTT
30001 GCCTTTACCA AGTATTGCAG ATACTACTGC AAATAAGTGA AGAAAGTAAC
30051 AGCATTTAAC TGATTTGGGA ACTTGGTTTG ATCTTGTCTT AATGACCCAC
30101 TTCGAATGGT GGTTGAAAGT AAAATCTGTA TCGCCGCTT ATGTTTCCAT
30151 TTACCTAGAA ATACTTTACC TTTGAGCACA GGAAATTAAT CCCCTTCTGG
30201 TTGTTCTCCC CTGGCATTG GTTTTAAATA TATAATGATT ATGTTTGTG
30251 TAGGAAAAAT AGAAAAACAA CTACAATAGA AAATCTTCTC CATATATTAT
30301 TTTGAAATAC ATATTTCCGA TCCGATAATC CATTGCTCTA GCATGGAAAA
30351 TGTTGGATTT ACTTGTGTTT GCTTTTTCCA AATAAAATGG AACTTTTGTG
30401 GCTACATTAT AGAATTGTTT TAGACTGCTT AATTCTGTGT GTTGTGAGA
30451 AAGGGAGGAG TGGGGAAGGT AAAATCTTGA ACATACTTTC TTCGTGGGTA
30501 TTTTTCCTTG AGCGATTCCA TCTTAGTTGA TTAGCAGTTA GCAATGCCC
30551 ATTCACACGA AGGTTTTCTT ACCTTTTTGT GATAATGATA GCTAACGACA
30601 TCATTTCTTC TTTTTTCCCT CTCTTCTTGT TGTCTCTAGG TGATGGCCAT
30651 TGCCACTTTG GCTGCCTGTT ATAATAACCA GCAGGTGTTT AAAGGGGCAG
30701 TGAAGATTCG GAAAGGGCAA GCAGTGACCC TGATGATGGA TGCCACCAAT
30751 ATGCCAGCTG TCAAAGCCAT CATATATCAG TATATGGAAG AGGTGGGTTT
30801 TTATTTAACT ACTTGGATA TTTGTAGCTA CTTTTATGAT TTAGTAATGT
30851 CACTGTTTAA CCAGGTTTGG ATATTAGATG ATCCTAACAA TTCACTATCC
30901 TGTGGCCTAA AGAGACAGGA ATTGATATCC TTTATAAGGA AAAAAGTCTA
30951 TTCACAGGAG CCGAGCAGAT TGCTCACTGC TGTGTAGTAC CCTGGTGAGA

FIGURE 3J

Docket No. CL001201DIV
Application Serial No. 10/644,021
Inventors: Ming-Hui WEI et al.
Title: ISOLATED HUMAN ENZYME PROTEIN...

31001 GGAGATAAAAT GGAGCAAGGC TGTAGGTTGG AGCCCCTCAG TAGAATCATA
31051 GATTTTGGAGC TGCAAGATGA TGCAGGAGGC CAACCAAGCT TCTTGTGCT
31101 GGTGAGGAAT GTGAGGTTGA AGCTTGTCTG TGCTGATGCA GTGCGTGATT
31151 GAGTGGATCT CTGGCTCCCG TCCATGTGTC CTGACACCCA GTCTGGTACT
31201 TTCATTATGC CACAGGCCTC AATTGAAAAA TCACAGTAGG GAATTTAGGC
31251 CAAGGAAAGC CATCAAGTTG CAATTATTTT CTAAATTTTC TTTGGAAAAAT
31301 TTCATTTCAT ATACCAAAAC CATCCTATAA AAAGAAAACT TACCTTCTTA
31351 GGTCAAACTC CTAATATTTG ACTAGGTTCA AAAAGTTTAT TTCTGGCCAG
31401 GCACAGTAGC TTACTCCTGA AATCCCAGCA CTTTGGGAGA CCAAGGTGGG
31451 AGGATCACTT GAGGCCAGGA ATTCAAGACC AGCCCGGGCG ACATAGCAAG
31501 ACCCCATTTC TACAAAAAAT TTAAAAATTG TCATGGTGGT GCACGCCTGT
31551 GGTCCCAGCT ACTCAGGAGG CTGAGGCAGG TGGATCACAT GAGCCTGAGA
31601 GGTCGAGGCT ACAGTAAGCT GTGTGATTTT ATCATTGCAC TCTAGCCTGG
31651 GTGATAGAGT GAGACTTTGT CTCAAAAAAA AAAAAAAAAA AAAAAAGTCTT
31701 AGAGACCAGA AGTCTCTGTA ATCTCTAATA ATCTCTAGGC CCTAGAGCAG
31751 TGGTTTGTAA ATGGAGGTGA TTTGCTCCCC TCCCCCAGA GGACATTGGA
31801 CAATGTCTGG AGACATTTTT GATTGTCTTA ACCGGCAGGA ATCGGGTGCT
31851 ACTGGCATCT GGTGAGTAGA GGCCCAGGAT GATGCTGTGA TCCTCAGGTG
31901 TGATCCTGTT GAGAATGAAA CACTGTAGAC TTTATGAAAA CATACAAGAC
31951 CCTCATCATT TTTCCTTTGC CTGAGCTCCC TCCCAGAGG TTACCTCTGT
32001 TCATGGTTTT TCATGCTCGT TGTACGCGT TGTTACGCGT TTACAGGAAT
32051 ATGGTTTGCA ACAGTGTTTT CATCTAAATA GAATTATACA AAATAGCGAT
32101 TTCTGATTTT TCTTGCATAT TGCACATTCT TCTTATACTT CCTCCCTACC
32151 TTTATCTGAC ACAGAAATGC TGTATGTCCA GAACCTCTAT CAGAGGCACC
32201 TATGGAAGTC TAAGGGAAGA CCACATCGCT TTTAAAAACC CTAAATTTTT
32251 GTAGTCACTA GATGAAAAAT TTCAGCCAGT GACCCAAAAA ATTGCTACCA
32301 ATGAGACTCT CCATTTTGCC ATGTAGCCAG AACTTACTTT GATCTATGTG
32351 CCTGGGGTAG TGACCAAGTA GGTGGGTAGG AGTAATCTCA GGGAAACTTG
32401 AGGCCCCAGC CTCATGGCTA GGGTCATAAT TTGAACCCAG GTCTGTCTGA
32451 CATCAGAATC CATGATGTTA ACCCCAATTC TAAGGGGTTC AACTACCTTT
32501 TCTAAATGGA ATCCTGCTAT ATTAAGCACT ATTTATTCAT TTTATATAAA
32551 CTAGAAACAT TTTATGTAGT AAGTAGTTGA GAGTGTTTTG GTTTTGCAGT
32601 TTGATCACTA GTTTTAGAAA CCAGTTTTTA AACACTTTGT GGCCAATTCC
32651 ATTACTATAT TAAAATTCAG ATTTATTTGG TTTTTCCTTA ACTATTGGGA
32701 TTAAATCCTG GTTGTAATTC ATAGTTTGAG GGCGAGGGTG GGCAGTCTAC
32751 ATTTGGCTGA GCCCTGTTTT TGTGAATAAA TGTATCAGA ACACAGCCAC
32801 ACCCATTTGC TTCTATGTCT TCTGTGGCTG CTTTTCGAAT GTGACGGCCG
32851 AGTTGAGGAG CTGCAACAGG CGATGACTTG TAAAGCTGAA AATATTTTTT
32901 GGCCCTTGAA TAAGAGGTTG GCTGACTTCT GACTTAGGGC ATCAGTTGTT
32951 CTGTTATCCC AGTAAACTC AAGGCATTAG GGGAGAAATG TTAATATTAA
33001 TACTTAACTT GATTTGATTT AGGGAAATCT TTGAAGATTT CTAAGTCTTA
33051 AGCAGTAGAA CCTGTTAATG GTTTTAGTTT CAGCAGTAAG GACATTTTAC
33101 AAGTAAAGTT TTAATGAAA ACATTTTGTA TGAAGCCACA AGTCGTCTGG
33151 CCTCTTGCTG GTGTCCAGAT ATTAACACTG ATCCTATTTT TCCTTGCTGA
33201 CCAAGTCTGT CTTTGTAGT AAGAAAGGAA GAAACGTTGA CTCTGTCCGA
33251 TCTCTGGACT TAGTGTTGTA GCGAGCATGC ACCTGGAAGG GACTTGCCAG
33301 AGGACCTCCT CATGCTTCTC CAGTGCTTAG TGGGGGCTTG GAGTGCAGCC
33351 CCAGGTCTTC ACGAGCAGTT GGCCCACTG CAGGGCCCTC ACCCACTCT
33401 GGAGCAGCCT CTGCTTCAAA CCAGCCTGGA TGCTTGTGAG CTGGGGAGAA
33451 GATCAACCTG CTATTTTGGG ATAGAAATAA ATGCTCAGCC AAACGGCCAG
33501 AAACCCCAT TCCCTCTCT GCAAAGTGA ATTCCTTGGC AGGGAGAAGC
33551 TTGTTCTGTT CTCTGCACAC TTCTGTGCC CTCTGTGGT TAAGTCAGAG
33601 AATCATCCGG CTCTTTGAG CCCAGGTGCC TAGCTGCTCA AGGATGGTCC
33651 CCAGCCAGCA GCTGCCAGGA ATCAGCTGGG AGCCATTAA GACATCCAGC
33701 CCCCACCAA ACCTATCGAA TCAGAACTG CCTTTTTTTC CCAAATGATG
33751 TTTTGTCTTT AATGGAAGTT TAGATGTTCA TAGACAAGAG TTTTAAATGA
33801 TGATCAAGCT GATTCCATAT TCGCAGTTGT AAGTAGAACT GCTGAGACGT
33851 GGAAGTACCA CATGGACTCA CAGAGGAGCT GCTGTATGTA GCACAGCATT
33901 GCACAAGAGC TTATTTTCTG CTAGTAAACA TTTATAGGAG CCTGTGTCAT
33951 TTAATCATCA AGCCTCGCAC TGTGGCTCAC ACCTGTAATC CCAAACCTTT
34001 GGGAGGCTGA GGCAGGCAGA TCACTTGAGG TAAGGAGTTC GAGACCAGCC
34051 TGGCCAATAT GGCAAAACCC TGTCTCTACT AAAAATACAA CATTTAGCCA

FIGURE 3K

Docket No. CL001201DIV
Application Serial No. 10/644,021
Inventors: Ming-Hui WEI et al.
Title: ISOLATED HUMAN ENZYME PROTEIN...

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34101 GGTGTGGTGG TGCACACTTG TCATCCCAGC TATTCCGGAG CCTGAGACAT
34151 GAGCATCGCT TGAACTCGGG AGGTGGAGGT TGTAGTGAGC TGAGATGGCA
34201 CCACTGCACT CCAGCCTGGG CAACAGGGTG AAGGCCCTTT CTCAAACCTCC
34251 TCAAGTATTT GGCTTCAACT TTATGCCGGG CATGTAGATG AAAAGTCGGC
34301 TATGACCTGT CCTTGACAAG CAGATGTAAC TCCTTGATTG AGGCTAGTAG
34351 GTTTTTTAAGA CCTGAATAAT TGAGTTTGCA GAAACCTACT GTGTGCCTTC
34401 AGGTAATGAG AGAGTGGGGT TTGGTCTAGC AACGAAGCAT CTAGAAGGTC
34451 TCTTTGGCCT TACCGGCTCT GTTTTAGGTA AGTCCACGTC TGAGTACCAG
34501 TGACTGCAGC TCTTCCAGTT GTGCTGTCAT GTTTATATGT TAGAAATGAT
34551 CATCAAAGGA CTCAAAGTT TTGCCACTAA TTGTATTACC GGGGACTGTC
34601 ACAACCAAGA TTTCTCTTAA TTTATTCAAC TTACTTATCT CCTGGAAGGG
34651 CATATTGAAG TGCTCTTGGA GTTCTCTAAA AGGGTTTTTG TTGGTTGTGT
34701 ATATTCACCT GGGTGCCAGC GATTGATTCC AAATAAGTAA ATCTTTTTTC
34751 CCAAAAGGAT GTAAGATGGC TTATGGTTAT AAGTACAACA GGCTAACAAA
34801 GTACAAGTAG ATGAGAAAGT AAAATGAAGA AATAAAGTCA TAGGAGCCAC
34851 AGAATTAACC CAGGAATGAA TAAGTGTGTA GTTTGGTGCT GATGTTATCA
34901 TCCTTTATTT GTACATTGCT TGTACAGTTG CTCTGAGAAG GTAAGTCTTA
34951 AATTTTCAAA AGTGAAATGT CACCGAGCAT GGTGGCTGAT GCCTCTAATC
35001 TCAGCACTTT GGGAGGCTGA GGCAGGCGCA TCACTTGAGG TCAGGAGTTC
35051 GAAACCAAGC TGACTTATGT GATGAAACCC TGTCTCTACT AAAAAAAAAA
35101 AAAAAAAAAA AAAAAAAAAA AAAAAATCCA AAGTTAGTTG GGCATGGTGG
35151 CAGGTGCCTG TAATCCCAGC TACTTGGGAG GCTGAGGCAG GAGAATCGCA
35201 TGAACCTGGG AAGTGGAGGC TGCAGTGAGC CAAGATTGCA CCACTGCACT
35251 CTAGCCTGGG TGACAGAGCG AGACACCATC TTAAAAAAAA AAAAAAATCT
35301 ACAATATACC AAAACCATTA CTTACCTGAG AAACATTCTC CAGGGTCATT
35351 GTAGTGAATG CCTATTTTAT GGCTTTTGAT GGCATCAGGG CACTCAGGTC
35401 ATTTACAAGA GTAGTGTGTG AGACCTGTG TGTCACTGCC ACTCATCTTG
35451 GCCTTCGGCC ACTGCTGTAG CAACCAGTTT CCAAGTAGGG CTGGACCTTG
35501 CCTTCTGCTC CAGAGACCTC TCGCTTCCTG CCCTTGGGCT TCTGACGAGC
35551 TGCAGGAAGT GCCTGGCAGC TGGGTCCCCA CAACCCAGAG GAGGTGAGGG
35601 CCACCTCTCT GCTCCTCAGG GCCACCTTTC ATAAGGCTCC TTGAAGGTCC
35651 CTCAAGATCA AGCCAACTCA ACACATCCTT GATAGGCCTT CCTGCCTTCT
35701 GTTTCACCTC TCCACTCGTT TCCAAATAAA TGGCTGCATG CAAGCTTTTG
35751 CCTCAGGTTT TGCTTTTAGG AGGAAGGCTA AGACAAGCAG TAAAGCAACA
35801 TGGGCAGGCA GAAGGATGAC TTCTAATAGA ATTATCTCAT CACTATATAT
35851 TTTACTTTAT GGATGCTTGT ATTGAAAAGT CTTGGCTGGG TGGAGTGGCT
35901 CACGCTGTA ATCCCAGCCC TTTGGGAGGC CGAGGTGGGT GGATCACTTG
35951 AGGTCTGGAG TTTGAGACCA GCCTGACCAA CACTGGTAAA ACCTTGTCTC
36001 TATTAATAAT GCAAAAATTA GCCAGGGATG CACGCTTGCT GTGTGCCAGC
36051 ACAGGGCTAG GCTGGAGATA AAAAGGTGAG TAAGTAGGTG CGGTGTAGTC
36101 AGGGTGAAAA CTACAGATGG TCCATTTCCA CGTAAGTGGA AAGGTAAAGG
36151 TATGTACAAT AGGGTGGCTC CTGGCTGAAC CTGGAGCTGC AGACAGGTTT
36201 TCTAGAAGGC ATAATCCTGA AGTTGAGACT TGGGGGCCA GGTAGGAGCC
36251 AGTTGAAGGG ACGTGGGAGG CGCATTCAG AGAGAAGGAG TGGTATGAGA
36301 CTGGAACAGA GGTGTGCAGC AGCATCGCAT GGGCGAAACA ACAGTAGACA
36351 GTTGTCTCTT TGTTTTGTG TGTTTTGTG GACAGGGTCT TGTCTGTCA
36401 TCCAGGCTGG AGTGAGTGG CATGATCTCG GATCACTGCA ACCTCCACCT
36451 CCCAGGCTCA AGTGATCTTC CCACCCAGT CCCCAGTAG CTGGGGGACC
36501 ACAGGTGCAT GCCACGATG CCGGCTAATT TTTGTACATT TTGTAGAAAC
36551 AGGGTTTTTAC TGTGTTGTCC AGGCTGGTCT TAAACGCCTG AGCTTAAGCA
36601 GTCTACATGC CTCAGCCTCC TGAAGTGCTG GGATTCCAAA CATGAGCCAC
36651 TGTGCCTGGC CCGGCAACTG TTAGTAGACT ATAGAGAGGG AGGTGGGCAA
36701 GGGCTGGTGA CACTAGACAG GTGCAGTAG TCTGGACCAT GGGTGGCCTT
36751 GCGCTACACA TTACAGAGCT CAGGCTTTTT TTCTCCAGGT GAGAGGGCTG
36801 GTGCCACTGA GGCATCAAGC AGAGGTTTGA GATCTCCTTG GTGACAGTGT
36851 AGAGCAGACA GGTAGATTTG GGAATTTAAG CTTAGACTCA CGTTGGAGAC
36901 TGAGATAGCT CATCTGAGAG GCACTCAGGG CCTAATCTCA GGCAGTAATT
36951 TTAGGGATGT AGGGGAAGAG ATGGATTCTG CACATACTTG GGAGGCTTGT
37001 GGAGGAGTGG GGAGGGAGGC ACAGGGAGGA CTCCAGGGTG GTTCATACGG
37051 CTCCCTGCTT CTGTTCTGTG CCCCCTTTGT CAAGCTGTGG TCTGTACTGC
37101 GTGTTCCATC TTGTTTCTAA GCTGCTTTTG CCCAGTCTTT CCAGCATTTT
37151 CCTTTCGTCA TGTTAGTCTG TGCCTGTCTA CGTGAACAT GGTGACGTTT

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FIGURE 3L

Docket No. CL001201DIV
Application Serial No. 10/644,021
Inventors: Ming-Hui WEI et al.
Title: ISOLATED HUMAN ENZYME PROTEIN...

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37201 ATTGGGCCTG GCACTGTGAG GTGCTGGGGA TGTGAAGATC ATTGTGGCTC
37251 AGCCGCTGCT CTCGAGGGCC TCTGGGTGCA GTATGCACAC CTGTGCCTCC
37301 TGTTTGCTCA GGAAGACAGG CTTTGAGATG AGCTGGGGCT GACATCCCCA
37351 CCTTATCATT GGGATGGCTT TGGGTAAAGT ATGTTTCATGT TCTCTGAGCC
37401 TCCCTTTCTCT CATTGGTAAA ATGGGTATAA AATACCTGCC AGTGGAGGGT
37451 TGTTGTAAGT AGCCATGGAA AATGTAAAGC ACATAGCACT TACCATTTTT
37501 TCCTGTGTCT TTAACAGATT TATCATAGAA TCCCCGACTC AGACCATCT
37551 TCTAGCAAAA CAAGGCAGAT CATCTCCACC ATCCGGACGC AGAATCTTCC
37601 CAACTGTCAG CTGATTTCCC GAAGCCACTA CTCCCCCATC TACCTGTCGT
37651 TTGTCATGCT TTTGGCTGCC CTGAGCTGGC AGTACCTGAC CACTCTCTCC
37701 CAGGTAACAG AAGACTATGT TCAGACTGGA GAACACTGAT CCCAAATTG
37751 TCCATAGCTG AAGTCCACCA TAAAGTGGAT TTAATTTTTT TCTTTAAGGA
37801 TGGATGTTGT GTTCTCTTTA TTTTCTTCTT ACTACTTTAA TCCCTAAAAG
37851 AACGCTGTGT TTAGGGGACC TTTAGGAAAG TGAAATGCAG GTGAGAAGAA
37901 CCTAAACATG AAAGGAAAGG GTGCCTCATC CCAGCAACCT GTCCTGTGG
37951 GTGATGATCA CTGTGCTGCT TGTGGCTCAT GGCAGAGCAT TCAGTGCCAC
38001 GGTTTAGGTG AAGTCGCTGC ATATGTGACT GTCATGAGAT CCTACTAGT
38051 ATGATCCCTG CTAGAATGAT AATTAAAGT ATTTAATTTG AAGCACCATT
38101 TGAATGTTCT TACTAGTAGA AAATGATGTG AATTTCTTTT CTGTTCTGGT
38151 CCTATTTTTT TCATCATTTT GTTTTCTTTA ATTGGGTTGA ATGGAGTAGA
38201 TAGAAATATT TATGGTTTAG GTAACAGTTA GATGTTTCTT AAGAATGCAA
38251 ACTGCCTTTT CCACACAAAG GCTGGGAATA AAATCTGGG TATTCTCGTA
38301 TTCTCATTTA AAGGAGTTTA GCTTTCAGAG AGAAACAGCA GGATTGCTTT
38351 TGACCTTTTA GAAGATTGGT CTCCAGTAAA GGTGGACATT TTTGAGATTT
38401 TTATAATAAA GAATTTAATT GCTCTGCATT TGTCAAGTAC AGTTCGCTTG
38451 AAAGCCTGCC TGACTGTGGA AAAGATGGAG CTCAAGAAATG GAGTTGATGG
38501 CCCAGCGTGG TGGCTCATGC CTGTAATCCC AGCACTTTGG GAGGCTGAGG
38551 CGGTCGGATC ACGACATTAG GGGATCGAGA CCATCCTGGC TAACACGGTG
38601 AAACCCCGT CTCTACTAAA AAAAAAAAAA ATTAGCCAGG CGTGGTGGCG
38651 GGTGCCTGTA GTTCCAGCTA CTCGGGAGGC TGAGGCAGGA GAATGGCTTA
38701 AACCCGGGAG GCGGAGCTTG CAGTGAGCTC AGATCGCGCC ACTGCACTAC
38751 CAGTCTGGGC AACAGAGCGA GACTCCATCT CAAAAAAGG AAAAAATTGT
38801 AAAAAAAAAA AAAAAAAAAA NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN
38851 NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN
38901 NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN
38951 NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN
39001 NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN
39051 NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN
39101 NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN
39151 NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN
39201 NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN
39251 NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN
39301 NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN
39351 NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN
39401 NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN
39451 NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN
39501 NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN
39551 NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN
39601 NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN
39651 NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN
39701 NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN
39751 NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN
39801 NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN
39851 NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN
39901 NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN
39951 NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN
40001 NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN
40051 NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN (SEQ ID NO:3)
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FEATURES:

Start: 2058

FIGURE 3M

Docket No. CL001201DIV
Application Serial No. 10/644,021
Inventors: Ming-Hui WEI et al.
Title: ISOLATED HUMAN ENZYME PROTEIN...

Exon: 2058-2156
Intron: 2157-7996
Exon: 7997-8094
Intron: 8095-8869
Exon: 8870-9053
Intron: 9054-25147
Exon: 25148-25339
Intron: 25340-29365
Exon: 29366-29542
Intron: 29543-30639
Exon: 30640-30792
Intron: 30793-37517
Exon: 37518-37736
Stop: 37737

CHROMOSOME MAP POSITION:
Chromosome # 8

ALLELIC VARIANTS (SNPs):

DNA				Protein		
Position	Major	Minor	Domain	Position	Major	Minor
825	G	A	Beyond ORF (5')			
2632	C	T	Intron			
4430	C	T	Intron			
4791	C	T	Intron			
4886	G	C	Intron			
4887	A	T	Intron			
4889	T	A	Intron			
5110	G	T	Intron			
6911	G	A	Intron			
7212	A	G	Intron			
7355	C	T	Intron			
7398	T	C	Intron			
7653	T	C	Intron			
8310	A	G	Intron			
8145	C	T	Intron			
8031	G	A	Exon	45	R	K
8462	G	C	Intron			
8873	C	T	Exon	67	N	N
9190	C	T	Intron			
9311	T	-	Intron			
9847	T	C	Intron			
10460	C	T	Intron			
20204	G	A	Intron			
20362	C	A	Intron			
21166	G	A	Intron			
21477	G	A	Intron			
22230	C	T	Intron			
22941	A	G	Intron			
23963	C	T	Intron			
25686	A	C	Intron			
26018	A	G	Intron			
26078	G	A	Intron			
26625	C	G	Intron			
27151	C	T	Intron			
28032	G	A	Intron			
28772	G	A	Intron			
29572	C	T	Intron			
29761	C	T	Intron			
30732	G	C	Exon	281	L	L

FIGURE 3N

Docket No. CL001201DIV
Application Serial No. 10/644,021
Inventors: Ming-Hui WEI et al.
Title: ISOLATED HUMAN ENZYME PROTEIN...

30841	G	T	Intron
31376	G	A	Intron
32032	A	G	Intron
32525	A	G	Intron
34179	G	T	Intron
34249	T	C	Intron
34451	T	C	Intron
34532	T	C	Intron
36541	T	C	Intron
36607	A	G	Intron
36681	A	G	Intron
37493	C	T	Intron
37966	C	A	Beyond ORF (3')
37973	T	C	Beyond ORF (3')
38113	C	A	Beyond ORF (3')
38298	G	C	Beyond ORF (3')

Context:

DNA

Position

825	GCAGTGAACGTACCTGACAGGTTTCCTGTTTGTGTTTTGAGATGAAGTCTCGCTCTTGTC CCCAGGCTGGAGTGCAATAGCGCGATCTCAGCTACTGCAACCTCTGCCTCCTGTGTTC AGCGATTCTCCTGCCTCAGCCTCCCAGGTAGCTGGGATTATAGGCGCCTGCCACCATGCC TGGCTAATTTTTGTATTTTAGTAGAGACGAGTTTCAGCATGTTGGCCAGGCTGGTCTT GAACCTCCAGACCTCAGGTGATCCGCCCGCCTTGGCCTCCCAAAGTGCTGGGATTACAGGC [G, A] TGAGCCACCGCGCTCGGCTAGACCTGACAGGTTTTAAAGGATTACTGGTTGCTGTGTTA AAACAGACTGCAGGATGGCTTAGGTAGCCAGTAGGTTTTTTTTTTTTTTGGAGACGTAGT CTTGCTCTGTTGGCCTGGCTGGAGTGCAGCGGTGTCATCTTGGCTCACTGCAAACTCCGC TTCCCGGGTTCAAGTGATTCTCCTGCCTCAGCCTCCGGAGTAGTTGGGACTACAGGCGCC CACCACCACACTCGGCTTTTTTGTATTTTAGTAGAGACGGGTTTACCATGTTGGCCAG	(SEQ ID NO:7)
2632	GCCGTCCTGGCTGACCTGTCCCTGCCCGCAAGCCGCCCTGGGCATGAGCGACTTTTGC GTGGTTCCCGGTGGTTGCGCTCCCGGTTTCGTCCCTCCGTGAGCATCGGCGCTTACCGG TATTTTAACCCGAGGGTTACACATCTGAGGCAATGTGGGTGGGTACGCGGGAGAGGACG AGTGAGTTTTTTGGTAAGCGGAATGAACATATGCAGATAACATCACATGAAGGCCGTTTCT GGAATGAAGTCTGACTCCTCCAGTTTACCACCTCTCCGGAGCTCTCCCGCCTTGCTG [C, T] CTTCCATCGCTTCATCCTCGGTGCTTCTGAGTTTTAAATCGCCTATCTACGCTTCCAA GTTCCAATGAGTTATCTAACGTCTATGGATTAGCTAGGTGGTTGGTGAAGGTCAGAACT TGGTTTTACTTAGATTTTATCTGCCTCATGCCTGTACTATTTGTTAATGAATGCATAG GAGGTGTTTTTATCCAACAAGAAAATTATTCGTACGCGATTATTGAATGAATAGACAAA TTCAGCCAAGTTCTTCTGGTCTGGACCAGCCTGGCTGATTTCTGTAACTTTTTTGGGCCA	(SEQ ID NO:8)
4430	GGCCTTTTTTTTTTTTTTTTGGAGGGGGGGTCTCACTCCATCGTCCAGGCTAGAATGCT GTGGCCTGAACATGACTCACTCCAGTTTTTGACTTCCTTGGCTGAAGCCATCCTCCACCT CGGCTTCCTGATCCCGAGTAGCTGGGACTCCAGGCACGTGTCACCAATGCATGGCTAATT TTTAAATTTTTTTGTAGACACAATGTCTCGCTGCATTGCCAGGCTGGTCTTGAACCTCT GAGCTCAAGCGATTTTCCACCTCAGCCTTCAAAGTGCTGGGATTACAGGTGTGAGCCAC [C, T] GCACCCAACCAAGTTTCTCTCTGCAAACTAGGGAAAAAATTTACGCTTAGCAGATATTGAG GGCTGATTATTTCTATCACAGAAGCATTTGGCTATAGAATTTAGGGTTTAGTAACTTG ATTTACACTGAATTTTAGGTGCATATCAGTAAATCTACGGGCATATGCCGCTGCAAGT TGTGTGGCATCACCCAAAAGCCGAGAGTAATGGAAAGAGCAGGCTGTTAGTAATCAGGCA GATCTGGCTCCTGTCCAATCTAAATCCTGTTATTTAGACTAATATCTTAAGTCTGTTATT	(SEQ ID NO:9)
4791	GGCTGATTATTTCTATCACAGAAGCATTTGGCTATAGAATTTAGGGTTTAGTAACTTG ATTTACACTGAATTTTAGGTGCATATCAGTAAATCTACGGGCATATGCCGCTGCAAGT TGTGTGGCATCACCCAAAAGCCGAGAGTAATGGAAAGAGCAGGCTGTTAGTAATCAGGCA GATCTGGCTCCTGTCCAATCTAAATCCTGTTATTTAGACTAATATCTTAAGTCTGTTATT AAGTCCGATTTCTGACGCTATTAAGTTAGGTGAACAACCTTGGTAACTTAACCTCTGAAC	

FIGURE 30

Docket No. CL001201DIV
Application Serial No. 10/644,021
Inventors: Ming-Hui WEI et al.
Title: ISOLATED HUMAN ENZYME PROTEIN...

[C, T]
ACAGTTACTTCATCTGTAAATAGGGATGTATGTATGGTAACGATTTTTTAACCACAACT
TCCCAACTCTAAGATGGTCTGAAAAGAATTTTTGAGTGTGGCTCAGAATCACTTGGC
AGCAAAACCTGACTTGAAGTTGAGGCTTCATTCATCCCACTTAGTATATTCAAATGTTTT
GCTAAAGAAATAATTATGAGGTGCTACTTCACACTGACTAGGGTTGTATATGCATTTTAT
TGCCATTTTTCTAAACACTAAAAATGCTAAATTCGCCCCAGGTCTGCCACAGATGTT (SEQ ID NO:10)

4886 CTACGGGCATATGCCGCCTGCAAGTTGTGTGGCATCACCCAAAAGCCGAGAGTAATGGAA
AGAGCAGGCTGTTAGTAATCAGGCAGATCTGGCTCCTGTCCAATCTAAATCCTGTTATTT
AGACTAATATCTTAAGTCTGTTATTAAGTCCGATTTCTGACGCTATTAAGTTAGGTGAAC
AACCTTGGTAACCTTAACTCTGAACCACAGTTACTTCATCTGTAAATAGGGATGTATGT
ATGGTAACGATTTTTTAACCACAACTTCCCAACTCTAAGATGGTCTGAAAAGAATTTTTT
[G, C]
AGTGTGGCTCAGAATCACTTGGCAGCAAAACCTGACTTGAAGTTGAGGCTTCATTCAT
CCCACTTAGTATATTCAAATGTTTTGCTAAAGAAATAATTATGAGGTGCTACTTCACACT
GACTAGGGTTGTATATGCATTTTATTGCCTATTTTCTAAACACTAAAAATGCTAAATTC
TGCCCCAGGTCTGCCACAGATGTTTCAGTGGACTATGGGCCTGTGAGACCTTAAAGGGT
TGATTGAGTAAGGATCACAGGTGATGTCCGCATTGTGCTTGGCATGGAGTTAAGTGCTTG (SEQ ID NO:11)

4887 TACGGGCATATGCCGCCTGCAAGTTGTGTGGCATCACCCAAAAGCCGAGAGTAATGGAA
GAGCAGGCTGTTAGTAATCAGGCAGATCTGGCTCCTGTCCAATCTAAATCCTGTTATTTA
GACTAATATCTTAAGTCTGTTATTAAGTCCGATTTCTGACGCTATTAAGTTAGGTGAACA
ACCTTGGTAACCTTAACTCTGAACCACAGTTACTTCATCTGTAAATAGGGATGTATGTA
TGTTAACGATTTTTTAACCACAACTTCCCAACTCTAAGATGGTCTGAAAAGAATTTTTTG
[A, T]
GTGTTGGCTCAGAATCACTTGGCAGCAAAACCTGACTTGAAGTTGAGGCTTCATTCATC
CCACTTAGTATATTCAAATGTTTTGCTAAAGAAATAATTATGAGGTGCTACTTCACACTG
ACTAGGGTTGTATATGCATTTTATTGCCTATTTTCTAAACACTAAAAATGCTAAATTC
GCCCCAGGTCTGCCACAGATGTTTCAGTGGACTATGGGCCTGTGAGACCTTAAAGGGT
GATTGAGTAAGGATCACAGGTGATGTCCGCATTGTGCTTGGCATGGAGTTAAGTGCTTGA (SEQ ID NO:12)

4889 CGGGCATATGCCGCCTGCAAGTTGTGTGGCATCACCCAAAAGCCGAGAGTAATGGAAAGA
GCAGGCTGTTAGTAATCAGGCAGATCTGGCTCCTGTCCAATCTAAATCCTGTTATTTAGA
CTAATATCTTAAGTCTGTTATTAAGTCCGATTTCTGACGCTATTAAGTTAGGTGAACAAC
CTTGGTAACCTTAACTCTGAACCACAGTTACTTCATCTGTAAATAGGGATGTATGTATG
GTAACGATTTTTTAACCACAACTTCCCAACTCTAAGATGGTCTGAAAAGAATTTTTTGAG
[T, A]
GTTTGGCTCAGAATCACTTGGCAGCAAAACCTGACTTGAAGTTGAGGCTTCATTCATCCC
ACTTAGTATATTCAAATGTTTTGCTAAAGAAATAATTATGAGGTGCTACTTCACACTGAC
TAGGGTTGTATATGCATTTTATTGCCTATTTTCTAAACACTAAAAATGCTAAATTCGTC
CCAGGTCTTGCCACAGATGTTTCAGTGGACTATGGGCCTGTGAGACCTTAAAGGGTTGA
TTGAGTAAGGATCACAGGTGATGTCCGCATTGTGCTTGGCATGGAGTTAAGTGCTTGATA (SEQ ID NO:13)

5110 AAATAGGGATGTATGTATGGTAACGATTTTTTAACCACAACTTCCCAACTCTAAGATGGT
CTGAAAAGAATTTTTGAGTGTGGCTCAGAATCACTTGGCAGCAAAACCTGACTTGAA
GTTGAGGCTTCATTCATCCCACTTAGTATATTCAAATGTTTTGCTAAAGAAATAATTATG
AGGTGCTACTTCACACTGACTAGGGTTGTATATGCATTTTATTGCCTATTTTCTAAACA
CTAAAAATGCTAAATTCGCCCCAGGTCTTGCCACAGATGTTTCAGTGGACTATGGGCCT
[G, T]
TGAGACCTTAAAGGGTTGATTGAGTAAGGATCACAGGTGATGTCCGCATTGTGCTTGGCA
TGGAGTTAAGTGCTTGATAAATGGTGGTTATCAATCTGATTATGTAATTTATGTAATTT
CAGTTCTCAAGTTTGTGGTTTTTTTCCCCTCCTGGAGAAATCTATCTATTTTAAAGTGA
GGAAGGCTCCGTGGAGGGCTGGTAGCTGGTAGCTGTTCACCTGTGGAACCTTCAGCCTGA
GGCTGGAGCCCCCTCCTGGGAGTCTGGTCTTGTCTTCTTCCGACCCCCACACCCCTT (SEQ ID NO:14)

6911 CCACCTTGGCCTTCCGAAGTGCAGGGATTATAGGCGTGCGCCACTGCACCCGGCCCTGTT
GGATAAATGATTCAGTCTCTCCCAAAAAGAAGTGTGTAAGACTGTGGGGTGAGGGGAG
GGAAGGGACAAATAGGAACCCGCCGTATTTTCCACTCCCTGTGGGCCTAAACTGCTCTA
AAAAATAGTCCATGAAAAAATACATAGTACAAACAGCAACTCTTCTGATATGCTTGCAT
TTAAATCAGGCTTTTCTCCCTTTTGGAAAAACACAGTCCTTGTGCTTTAGGGAAGA
[G, A]
TAAAGGTCAGTGCGCTGCATTGCATTAATTTTGAAGGAAAGATGAGAAGACATCTTGAA

FIGURE 3P

Docket No. CL001201DIV
Application Serial No. 10/644,021
Inventors: Ming-Hui WEI et al.
Title: ISOLATED HUMAN ENZYME PROTEIN...

AGGAATGGCTGGCTTCTAGAGAATAGTAGAGGCTTAATAGGTGTCATAGAAAAACCAGG
GTTGGACAGTGGTAGTAAACGGCAAAACAGATTTTATTAGAAAACTACTGCAGTAAG
AGGAGAGAGACCTCGGTACAGAACTGCTCCACTGCGAATACAAAGAAAAGTAGGAATTGA
TGGCGGGGAGCCGGATGTCAGTGGATGGAAAATTATTACGAGGAAACACAGGGGTGTGC (SEQ ID NO:15)

7212 TAAAGGTCAGTGCCTGCATTGCATTAATTTTGAAGGGAAGATGAGAAGACATCTTGAA
AGGAATGGCTGGCTTCTAGAGAATAGTAGAGGCTTAATAGGTGTCATAGAAAAACCAGG
GTTGGACAGTGGTAGTAAACGGCAAAACAGATTTTATTAGAAAACTACTGCAGTAAG
AGGAGAGAGACCTCGGTACAGAACTGCTCCACTGCGAATACAAAGAAAAGTAGGAATTGA
TGGCGGGGAGCCGGATGTCAGTGGATGGAAAATTATTACGAGGAAACACAGGGGTGTGC
[A, G]
TTCTTGCTGAAGGCAGGCCAGAGTTATCAGACATCACCTGAGGGATGGAGGGGGATGTGG
AACCTAATCGGCTGTCTAGGGTGATCAGATACTGAAGTTGGGGGATTCTGGTCAAATCAA
TTTAGCAGGATTCTTGGTAAACTGGGCGATGCAAAGACAGATGCGTTGAGTACAAAGTC
CAGGCTTTATTGGGAAGAGGATTTCAGCGGAGCCGAGTAGAGTTTGGTCTAGGGAGACT
CTGTCACTGGGAGGACGAGCGAGCCGCTCGGAAGTGCCTGGGTTCTCTTAGCGGCCAGT (SEQ ID NO:16)

7355 CAAAACAGATTTTATTAGAAAACTACTGCAGTAAGAGGAGAGAGACCTCGGTACAGAA
CTGCTCCACTGCGAATACAAAGAAAAGTAGGAATTGATGGCGGGGAGCCGGATGTCAGT
GGATGGAAAATTATTACGAGGAAACACAGGGGTGTGCATTCTTGCTGAAGGCAGGCCAGA
GTTATCAGACATCACCTGAGGGATGGAGGGGGATGTGGAACCTAATCGGCTGTCTAGGGT
GATCAGATACTGAAGTTGGGGGATTCTGGTCAAATCAATTTAGCAGGATTCTTGGTAAAA
[C, T]
TGGGCGATGCAAAGACAGATGCGTTGAGTACAAAGTCCAGGCTTTATTGGGAAGAGGATT
TCAGCGGAGCCCGAGTAGAGTTTGGTCTAGGGAGACTCTGTCACTGGGAGGACGAGCGAG
CCGCTCGGAAGTGCCTGGGTTCTCTTAGCGGCCAGTGGGTTCTGGTGAGAAGGGCAACA
GCGGAGGAGGCGCCGCTGCGGAGCGGGAGGCCGGGGCGGGCTGCGGGGCTGCGGGG
GGGCCGTTGTGGGTGCGGCCAGCGCGTATTGAGTAGAGGGCGAGCCCGTCCCGCCTCT (SEQ ID NO:17)

7398 GAGACCTCGGTACAGAACTGCTCCACTGCGAATACAAAGAAAAGTAGGAATTGATGGCGG
GGGAGCCGGATGTAGTGGATGGAAAATTATTACGAGGAAACACAGGGGTGTGCATTCTT
GCTGAAGGCAGGCCAGAGTTATCAGACATCACCTGAGGGATGGAGGGGGATGTGGAACCT
AATCGGCTGTCTAGGGTGATCAGATACTGAAGTTGGGGGATTCTGGTCAAATCAATTTAG
CAGGATTCTTGGTAAACTGGGCGATGCAAAGACAGATGCGTTGAGTACAAAGTCCAGGC
[T, C]
TTATTGGGAAGAGGATTTCAGCGGAGCCCGAGTAGAGTTTGGTCTAGGGAGACTCTGTCA
CTGGGAGGACGAGCGAGCCGCTCGGAAGTGCCTGGGTTCTCTTAGCGGCCAGTGGGTTT
TGGTGAGAAGGGCAACAGCGGGAGGAGCGCCGCTGCGGAGCGGGAGGCCGGGGCGGGG
CTGCGGGGCTGCGGGGCGGGCCCGTTGTGGGTGCGCCAGCGGTATTGAGTAGAGGGC
GAGCCCGTCCCGCCTCTCGTCGGGCGCTTCCAGATCTGCTTGAGTCTATGGAGGAAAAA (SEQ ID NO:18)

7653 AACTGGGCGATGCAAAGACAGATGCGTTGAGTACAAAGTCCAGGCTTTATTGGGAAGAGG
ATTTACGCGGAGCCCGAGTAGAGTTTGGTCTAGGGAGACTCTGTCACTGGGAGGACGAGC
GAGCCGCTCGGAAGTGCCTGGGTTCTCTTAGCGGCCAGTGGGTTCTGGTGAGAGGGCA
ACAGCGGGAGGAGCGCCGCTGCGGAGCGGGAGGCCGGGGGCGGGGCTGCGGGGCTGCGG
GGCGGGCCCGTTGTGGGTGCGCCAGCGCGTATTGAGTAGAGGGCGAGCCCGTCCCGCC
[T, C]
CTCGTCGGGCGCTTCCAGATCTGCTTGAGTCTATGGAGGAAAACTCCGCGGGGTCCGC
GATTTCCATGGCCGAGCCGCTGCGGCACCAAGGCCATGGCCCTCTTCAAGCGACCTT
GGTGCTGAGTCCCGCCGCGGCCAGGGGCCCGGCGCAGGCACCGCCCCGCGGGGCTG
CTGCTTGCCCTCCTGCCGCTGGCCCTGCAAGGACTGGCCTCGGGGAGAGGGCGGCAGGCT
GTGGAGCCGCTGCCCGAGTCCAGTCCCACTCCCACTCCCACTCCCACTCCCACTCCTG (SEQ ID NO:19)

8310 CAGCCTGAAAACCTTGCTACAAGTATCTCAATCAGACCAGTCGCAGTTTCGCAGCTGTTAT
CCAGGCGCTGGATGGGGAATGCGGTGAGTGATGGAGGACGCGCTCTGGCTTGAGAGGAA
AGCTTGTCGGGACTTTTGAAGTGTTGGAAGTACCTTTTATATAGCGCTCAGCGTTG
CAGCCTCGTTGCTGTGGCTTATCCAGAACATAGCCCGGCCCTACGTGTTTACTTTAGAAA
GCCCTTCCAGGCTCTTTGCCATCTAGTAGAGTCCCTGCGGGCCAGCCTTTTACAGAGAG
[A, G]
GGGGGAGGGGTGATGTTTATTAACTTTTTTTAGTCTTGGCAGCTGAACCTGCCTGTGA
GCAGGTGCTGATTTCTCGGCTTCCCTTATCCAACCTTTGCATTTCTATTTCTAGCATATT
GGGTTGATTCTTTGAAGCTGCCTCTGTGCACATTACACCCATGAACCTTAGACCAGTTGC

FIGURE 3Q

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Inventors: Ming-Hui WEI et al.
Title: ISOLATED HUMAN ENZYME PROTEIN...

CTTTATGTATGATCGTATTTATACTGAGAAGTTACTGTGTTTTTGGACTTTCTTTCTAT
TTGCTACATATTAGTTTCGGTCTAAACGTTTGGTCTTCTGGTCTCCATAGTTCTACATTG (SEQ ID NO:20)

8145 CAGCCTGAAAACCTTGCTACAAGTATCTCAATCAGACCAGTCGCAGTTTCGCAGCTGTTAT
CCAGGCGCTGGATGGGGAAATGCGGTGAGTGATGGAGGCAGCGCCTCTGGCTTGGAGGAA
AGCTTGTCGGGAC
[C, T]
TTTGAGTGTGTTGGAAGCTACCTTTTGATATAGCGCTCAGCGTTGCAGCCTCGTTGCTGT
GGCTTATCCAGAACATAGCCCGGCCCTACGTGTTTACTTTAGAAAGCCCTTCCAGGCTCT
TTGCCATCTAGTAG (SEQ ID NO:21)

8031 CAGCCTGAAAACCTTGCTACA
[G, A]
GTATCTCAATCAGACCAGTC (SEQ ID NO:22)

8462 GCTACCTTTTGATATAGCGCTCAGCGTTGCAGCCTCGTTGCTGTGGCTTATCCAGAACAT
AGCCCGGCCCTACGTGTTTACTTTAGAAAGCCCTTCCAGGCTCTTGCCATCTAGTAGAG
TCCCTGCGGGCCAGCCTTTCAGAGAAGGGGGGGAGGGGGTGATGTTTATTAACCTTTTT
TTAGTCTTGGCAGCTGAACCTGCCTGTGAGCAGGTCGTGATTTCTCGGCTTCCCTTATC
CAACTTTGCATTTCTATTTCTAGCATATTGGGTGATTCTTTGAAGCTGCCTCTGTGCA
[G, C]
ATTACACCCATGAACCTAGACCAGTTGCCTTTATGTATGATCGTATTTATACTGAGAAGT
TACTGTGTTTTTTGACTTTCTTTTCTATTTGCTACATATTAGTTCGGTCTAAACGTTTGG
TCTTCTGGTCTCCATAGTTCTACATGGTTAAATGCAACTCACTTCTGGGAGTAGTGGTG
ACATTCAACTAGTAGGCTTTTTTAATAAACTACAGAAGTTCATTACTCTCATGTAAGGAAG
GAAAATAATGTAACCTTTCGTTAAGTATGAAAAGCGTTGGATATCCTTATAGTTCTTTAG (SEQ ID NO:23)

8873 AAACGTTTGGTCTTCTGGTCTCCATAGTTCTACATTGGTTAAATGCAACTCACTTCTGGG
AGTAGTGGTGACATTCAACTAGTAGGCTTTTTTAATAAACTACAGAAGTTCATTACTCTCA
TGTAAGGAAGGAAAATAATGTAACCTTTCGTTAAGTATGAAAAGCGTTGGATATCCTTAT
AGTTCTTTAGAGTTAAGGGTGAGATGGGTTTAGAAAGTGGCCAGGCACAAGTTATTTTAA
AATAAAAAATCTTTGGCTGTTTGTTCGAATATATTAATAGTTTTCCCTTTTTTACAGCAA
[C, T]
GCAGTGTGCATATTTTATCTGGTTCTCCGAGCTCTGGACACACTGGAAGATGACATGACC
ATCAGTGTGGAAGAAGGTCCCGCTGTTACACAACCTTTCACTCTTTTCCCTTTACCAACCA
GACTGGCGGTTTATGGAGAGCAAGGAGAAGGATCGCCAGGTGCTGGAGGACTTCCCAACG
GTGAGTGGGGTTACGCATCTTGTCTACGGACTGTTGTGTTTATTAATTGCTAACGTGGTTG
TCCGGTAGCCTCCATACATGTGGAGAAAGGTTAAATAAGCATTCTGAGGGCAGCATAATG (SEQ ID NO:24)

9190 ATCTGGTTCTCCGAGCTCTGGACACACTGGAAGATGACATGACCATCAGTGTGGAAGA
AGGTCCCGCTGTTACACAACCTTTCACTCTTTTCCCTTACCAACCAGACTGGCGGTTTCATGG
AGAGCAAGGAGAAGGATCGCCAGGTGCTGGAGGACTTCCCAACGGTGAGTGGGGTTACGC
ATCTGTCTACGGACTGTTGTGTTTATTAATTGCTAACGTGGTTGTCGGTAGCCTCCATA
CATGTGGAGAAAGGTTAAATAAGCATTCTGAGGGCAGCATAATGTGAGGGTTAAAACTC
[C, T]
GGTAGCCAAGACTCTGAAGCCAGGCTGCCTGGGTGGAATCTCAAATCTCCCACTTACTA
AACTGTTGGTTACTTACAAAGACTCTCTGTGCCTCAGTTTCTTCATCTGTAAAAATAGGGG
TAATAATAACACCTACCTCATGGTATTCTGAGGATTCAAAGAATTAACGTAGGTAATGCT
CTTAGAATGTTAGCTACTGCTGTTATTATCAGTATTGGAAGTCCAGTGTCTTCTCCTGTG
GGAAGACGCAGTCAAATTTTAGTGTGTGAAAGATTCTCAGGCTAGCTCACAAAAGCCTG (SEQ ID NO:25)

9311 GAGCAAGGAGAAGGATCGCCAGGTGCTGGAGGACTTCCCAACGGTGAGTGGGGTTACGCA
TCTTGTCTACGGACTGTTGTGTTTATTAATTGCTAACGTGGTTGTCGGTAGCCTCCATAC
ATGTGGAGAAAGGTTAAATAAGCATTCTGAGGGCAGCATAATGTGAGGGTTAAAACTCC
GGTAGCCAAGACTCTGAAGCCAGGCTGCCTGGGTGGAATCTCAAATCTCCCACTTACTA
AACTGTTGGTTACTTACAAAGACTCTCTGTGCCTCAGTTTCTTCATCTGTAAAAATAGGGG
[T, -]
AATAATAACACCTACCTCATGGTATTCTGAGGATTCAAAGAATTAACGTAGGTAATGCTC
TTAGAATGTTAGCTACTGCTGTTATTATCAGTATTGGAAGTCCAGTGTCTTCTCCTGTG
GAAGACGCAGTCAAATTTTAGTGTGTGAAAGATTCTCAGGCTAGCTCACAAAAGCCTGC
CGACTGTATGATGCAGCCTACCTGTAACACTGCTGGCCTCTTGACTACCCGGAGCCTGGT
AGCATGGGACTGCTGCTCACGATGGGCAGCAGCCTGGCATGGGGCGGTGCTCTGTGGCA (SEQ ID NO:26)

FIGURE 3R

9847 CTGGTAGCATGGGACTGCTGCTCACGATGGGCAGCAGCCTGGCATGGGGGCGGTGTCTGT
TGGCAGCTAGGGCGAGCCTCTGCCACTTCACCTGTGATCCTGGGCAAGTTCCTTATCTGC
TTTGTGTCTCCGTCTCCTCGTTTGTAAAGTTAGAGCTGAGAGGATTAATTTGCGACATAT
AAAGTACTTAGTGCCTGGTACAGGGTAAGTATTCTGTAAGTATTAGCTATTTGGTCTATT
TTGTTGGAGTAAAGTGGGTATAGTTAAATCCTAAGATTTTAAAGTCCCTCAAGTTCA
[T, C]
GTGGACATCTGCCTAGGTCCTACTATCCTAGAATTCGCATGTCTTATCACACAAATAACT
GATTCTTCCATATCTTATAATAAAGGTTTGATTAGCAAAGTCACATGTTGTGTAATAG
CTCGAAGAAGCCCTTTTGTCCACAGTTGCCAGAGCTTTGGAGAACAGTCTTATGTTA
TTGAAACAAACCTAATCTGTAGCTGAGTTGGGAGGAGCTAAGTGGACAGAGAGTCTCC
ACCCAAACAAAGAATCTTTGATTCTTGGGCATAATGGGAGCAATATTTAAAAA (SEQ ID NO:27)

10460 AGGAATGTTTGGGAAGACTCTTGCGGTGCAAAGGCTGTTTCAGATTGCTGAGATCAGAC
CTTAAGTACCAAAGCCCAATATAGTACAACATAATACAAATGAGAAGAAAATAGCTGAA
GAATAATTCGAGTTTATACAGTACAATTCAAGAGAAGAAAGAAAATTTATGACGACTAGC
TGGGTGAGAATTAGAACTGTAACCCTGGGAAGGTCCTGGTGATTGACTCTCACAGGACA
CCTGATGACCAGAGGATGGGTTTCTTTGATGGGAAATCTGTGGCGATTCAATTGATGGGC
[C, T]
TCTGAATTCTGCTGAAGCAGAGGAAGTAGTAATACCCCATTTATAATGGAAGTGCATTCT
CACTTAAAAACAATAATATTATCTAGCTGGACCTAGCCTCTAGAAACAGCCAAATTAC
ATTTGACTTGAGTGGATTCTATAATAATTAATAAATTTCTGGGGCATGGGATAAATGTGTT
AGGTATTGCTAAGTCAAGGCAGCCCTATCCCTCAGCAGAAGTGAGGGAATATGAAAGTG
TGTGAATGCTAACATAATTTTGGGAATATCGCCGTCAGATTTCCAGATGATATCCAAC (SEQ ID NO:28)

20204 TCTGCCAGTTGCGAAGACTGGGAAAAGCACAGTATTTGGGCAGAGTATACTGTTCTCCA
GGTACAGTCACTACGCCTTTCCTTGGCTAGGAAAGGAAATCCCTGACCCCTGCACT
TCCTGGATGAGGTGACGTCCTGCCCTGCTTTGGCTCACCCCTCCATGGGCTGCACCCACTG
TCCAACAGTGCCCAATGAGATGAACCAGGTACCTCAGTTGGAATGCAGAAATCACCCAT
CTTCTGCATCGATCTTGCTGGGAGCTGTAGACCAGAGCTGTTCTACTGGGGCATCTTGG
[G, A]
AGCAACTCTGGGTCTGAGTTTCTGTTTGTGTCCTGATGTATATCCCCAGTGCCTAGAAT
GATACTTGTTACATAGGAAGTGCTTGATCCATGTTGACAAATGAATCTTTCTCATAAT
GAGGTTTCTCTAAACAAGCTGTTCTCCAAAACTTACACCCAGCTTTATGTTGAAGCAT
CTCATTATACATTGGAAGATGAAATGTGTAGTGAGACTTTGAATCTTCTTTTGAATCTA
GAAACATTAGCATTTTGTAGACCATCTATTTTAATATTTATGAAATTTATGAAATAATAA (SEQ ID NO:29)

20362 CCTCCATGGGCTGCACCCACTGTCCAACAGTGCCAATGAGATGAACCAGGTACCTCAGT
TGGAAATGCAGAAATCACCCATCTTCTGCATCGATCTTGCTGGGAGCTGTAGACCAGAGC
TGTTCTTACTGGGGCATCTTGGGAAGCAACTTGGGTCTGAGTTTCTGTTTGTGTCCTGA
TGTATATCCCCAGTGCCTAGAAATGATACTTGTTACATAGGAAGTGCTTGATCCATGTTG
CACAAATGAATCTTCTCATAATGAGGTTTCTCTAAACAAGCTGTTCTCCAAAACTTA
[C, A]
ACCCAGCTTTATGTTGAAGCATCTCATTATACATTGGAAGATGAAATGTGTAGTGAGAC
TTTGAATCTTCTTTGAATCTAGAAACATTAGCATTTTGTAGACCATCTATTTTAATATT
TATGAAATTTATGAAATAATAAGAAACATGAGGCCGGGCTCAGTGGCTTATGCCTGTAAT
CCCAGCAGTTTGGGAGGCCAGGGCTAGTGGATCATGAGGTCAGGAATTTGAGACCAGCTT
GGCCAACATGGTGAACCCCACTTCTACTAAAAATATAAAAATTAGCTGGGCGTGGTGGT (SEQ ID NO:30)

21166 TAATTCCGCCATTGTTTGCCTTGATCTTTGGTGCCATGTCTGTACATATTTATGATT
TCTGTGTTTTTACGGTTTCCATTTAGATCTCCCTTGAAGTTAGAAATCTGGCTGAGAAA
TACCAAACAGTGATTGCCGACATTTGCCGGAGAATGGGCATTGGGATGGCAGAGTTTTTG
GATAAGCATGTGACCTCTGAACAGGAGTGGGACAAGGTTAGTCTCATAAAACAGTGTCTG
TGTGTGATGTATTAGACAGAGCTGGCAGTCCTCATAGTGAAGCTCAGAACAAGAAAAGTT
[G, A]
TCCAGTATTTTACGCCCCCTCTGTTTTACAATTCATCTGTTTAGGTTGAATGTCTCATCA
TAAACAGTTTTATCCAGAGTTAATTCCAAACAGCAGCTATGTAGGATATCAGCCAGGCT
AGGAGTAGGGTACTGGAGAGAAGTGCTTATCTAGACAAAGGGATGTAATTGACCATGAAG
ATTAAACTACACATCAAAACATAAGGTAGGGTTAGGAGTCTGCCTATTTTTCATAGGA
ATGGTGTGTTGTGAGACTTACTCATCACTTCTGTGGAAGTAAAGACATTTTATTTATTTAT (SEQ ID NO:31)

21477 TCAGCCCCCTCTGGTTTTACAATTCATCTGTTTAGGTTGAATGTCTCATCATAAACAGTTT

FIGURE 3S

Docket No. CL001201DIV
Application Serial No. 10/644,021
Inventors: Ming-Hui WEI et al.
Title: ISOLATED HUMAN ENZYME PROTEIN...

ATTCCAGAGTTAATTCCAAACCAGCAGCTATGTAGGATATCAGCCAGGCTAGGAGTAGGG
TACTGGAGAGAAGTGCTTATCTAGACAAAGGGATGTAATTGACCATGAAGATTAATACTA
CACATCAAACATAAGGTAGGGTTAGGAGTCTTGCCTATTTTTCATAGGAATGGTGTGTTG
TGAGACTTACTCATCACTTCTGTGGAAGTAAAGACATTTTATTTATTTATTTTAAAGCCA
[G, A]
TCAGATTTAGCAGGCAGAGACATTTTCAGACATCTAAAGTGTGATGATTTTCATACCTTT
AACTGTGCTTAAATTAGGATCTCCGAAAAGATGCTGCTACATGGTCACTACGTTAGTGTA
GGTCCAAGGTCTTGGGCCTCTTAATTTTCAAACCTCAAACCTTGACAGCAGTTATCTTT
GGAAGTCTGATTTGTGCTTCCTAAGTTAACAGCATACAATGACTGCTAGAAATCAATTT
CTGCATTTAAGGTGAAGTTAGCCGGGTACTATGTTTACCTGTAATCTCAGCACTTTGGG (SEQ ID NO:32)

22230 GGATTGCTTGAGCCCAAGAGTTGAAGGTTGCAGTGAGCCATGATTGTGCCACTGCACTCC
AACGTGGGTGACAGAGCAAGACACCTACTGAAAGAAAATAAAGTTGAAGTTAAACTTCT
GGCCAAGAACCAGCACTGGTTATGATAGTAACCTATTTTCTGTGTGTCAGATTTATTCAG
GAACTTAATTTTAGGTTGTTGAATAGAAGTTTGTATCAGATAAAATTGAATTAATAA
ATTTTCTTGAAGACAGGGTCTTGTCTTATCCAGGCTGGTGTGTAGTGGTGTGATCACGG
[C, T]
TCCCCGAGCCTCAACCTCCTGGGCTCAGGTGATCCTCCACCTCAGCCTACCGAGTAGC
TGTAACACAGTGATGACACCATAACAGGCTCATTTTGTACATTTTGTAGAGAGAG
GGTTTGGCATGTTGCCAGGCTAGTCTCAAACCTCTGGCATCAAACAGTCCCTCCACTC
TGGCCTCTCAAATGTTGGGATTACAGGCATGACAGCCAATTTTCAAGGAGTTATTTT
TTTCTTCTACTTTGGGGAAGATGAATTATATAAGTCTCCATTTTAGGAGTATTTCTAC (SEQ ID NO:33)

22941 AATTTCTGTCTACCTAATTTTCAGCAAGATTTCACTCTTTTTCATGTTACTTTTGTCCCAGA
ACAAATTTCAAGTGCTTTCTCTTCACCTGTGCATTTCTCCCCCTGATTAGTCTCTGGCTT
TGTAATCTTTTCACTCAGAGACGACTTTTTTTTTTTGAGACAGGGTCTCACTCTGTCAAC
CAGACTGGAATGCAGTGGCACAGACAAGGCAGCCTTGACCTTCTGGGCTCAAGCAATCTT
CCTTGCCCTCAGCCTCCTGAGTAACTGGGACCACAGGCACGTTGCCACCATGCCTGGCTA
[A, G]
TTTATTTTAATTTTATTATTTTGTAGACAGGGTATTGCTCTGTCAACCAGGCTGGAGTG
TAGTGGCATGATCAAGGCTCACTGCAGCCTTCACCTCCTGTGCTCAAGCAGTCCCTCTCAC
CTCAGCCTCCCCATTAGCTGGGACTATAGGTCCACACCACTACACCAGGCTAATTTTGT
AATTTTGGTAGAGACAGGGTTTCATCGTGTGCTTAGGCTGGTCTTGAGCTCCTGGGC
TCAAGCGATTACCTGCCTTAGCCTCCCAGGTGTGAGCCACTACACTCAGCCTTTAAAA (SEQ ID NO:34)

23963 ATACTACCTAGTTTTGAACCTCTTAGCCCCCTGCCACAGACACGGCAGCCCCCTTGAACCTTC
CTGGGTTCAAGCGAGCCTCCTACTTCAGCCCCCTGAGTAACTGGGACCACTGGCCTGTGT
CACTGTGCCTGGCTAATTTTTTTTTTTTCTCCTCATATGGGCAATGTTGGGCAAGTTAAATC
GACTTCTTTGTGCCTCAGTTTCTCATCTGAAATGGAGATCATACTGCTATGTACCTGAT
ACAATGTTTGTGAGGATTGAATGTGCAGAGTTCTTTTTTCTGTTGTTGTTTGTGAGA
[C, T]
GGAGTCTCACTCTG (SEQ ID NO:35)

25686 CTGAAAAATCCTTTAACTCTTGTGTTGCGGGTGACAGAAAAACAAGCCAGGCCTCCCCC
AGGCAGCATAAGGGGATGTGGAATAAGGATAGATTGACATGAGTTTGCTTCAGGTAGAC
TGGCTGACTCCAGGATTACACCACGTAATCAGTATATTCAAGCCTTGCTGTCCTTGAT
TTCTTTTCAGACGCTCTTTCTCCAAGTGGTGGATATGGTAACAACCCACGTGCACTAGCTT
AACAAAAAGTTCTTAGGAATGGCTTTGTTGCGCCTGGCGCAGTGGCTCATGCCTGTAATC
[A, C]
CAACAGTTTGAGAGGCCAAGGTGGGCGGATCACCTGAGGCCAGGAGTTGAGACCAGCCT
GGCCAACATAGTGAAACCCCGTGTCTACTAAAAAATACAAAAATTAGCCGGGCGTGGTGG
CAAGGGCTTGTAATCCCAGCTACCTGGGAGGCTGAGGCAGGAGAATCGCTTGAACCCAGG
AAGCAGAGATTGCGGTGAGCTCAGATTGTGCCACTGCACCTCAGCCTGGGCGACAGAGTG
AGACTCCCTCTCAAAAGAAGAGGAAGGGCTTGGTTCTTCTGCTCAGCCCTGAATCAGTTA (SEQ ID NO:36)

26018 ACCTGAGGCCAGGAGTTGAGACCAGCCTGGCCAACATAGTGAAACCCCGTGTCTACTAA
AAAAATACAAAAATTAGCCGGGCGTGGTGGCAAGGGCTTGTAATCCCAGCTACCTGGGAGG
CTGAGGCAGGAGAATCGCTTGAACCCAGGAAGCAGAGATTGCGGTGAGCTCAGATTGTGC
CACTGCACTCCAGCCTGGGCGACAGAGTGAGACTCCCTCTCAAAAGAAGAGGAAGGGCTT
GGTTCTTCTGCTCAGCCCTGAATCAGTTACTGTTGCTACACAGCTGAGTTCTCTGGCCTC
[A, G]
CCTGGATTACGCTACACAGTACACAGAATGGATTTCCCCCAAGAAAGAAATCTGCG

FIGURE 3T

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Title: ISOLATED HUMAN ENZYME PROTEIN...

GCAGGAAGGGGAAAGGGATGGCAGGTAGACAAAACTCCAGGTGTCTGTAATAAGGGACA
GGGTCGATCTTTAATTAAAACATGGACAGGGAACAGAAAGCTTTTGATACTGATTTTGT
CAGAAGGAAAGTAGAAAATTTTATGACTGTTCCCTGAATTTATTCCAGCATTTACCTTT
GCTTTCCATAAAAGTGTTCCTGCAGCCAAGTACTTTAAAGTTTTAAAAAGACGGGTGAG (SEQ ID NO:37)

26078 AAAATACAAAAATTAGCCGGGCGTGGTGGCAAGGGCTTGTATCCCAGCTACCTGGGAGG
CTGAGGCAGGAGAATCGCTTGAACCCAGGAAGCAGAGATTGCGGTGAGCTCAGATTGTGC
CACTGCACTCCAGCCTGGGCGACAGAGTGAGACTCCCTCTCAAAAGAAGAGGAAGGGCTT
GGTCTCTGCTCAGCCCTGAATCAGTTACTGTTGCTACACAGCTGAGTTCTCTGGCCTC
ACCTGGATTACGTCTACACAGTACACACAGAATGGATTTCCTCCCAAAGAAAGAATTCTGC
[G, A]
GCAGGAAGGGGAAAGGGATGGCAGGTAGACAAAACTCCAGGTGTCTGTAATAAGGGACA
GGGTCGATCTTTAATTAAAACATGGACAGGGAACAGAAAGCTTTTGATACTGATTTTGT
CAGAAGGAAAGTAGAAAATTTTATGACTGTTCCCTGAATTTATTCCAGCATTTACCTTTT
GCTTTCCATAAAAGTGTTCCTGCAGCCAAGTACTTTAAAGTTTTAAAAAGACGGGTGAG
GCTAAGTGTGGTGTCTCATACTTATAATCCCAGTGTGAGGCCAGGAGTTCAAGACCAGC (SEQ ID NO:38)

26625 TGTGGTGTCTCATACTTATAATCCCAGTGTGAGGCCAGGAGTTCAAGACCAGCCTGAGC
AACACAGCAAGATACCATCTCTATAAAAAATTGTTAGAAAATGATTCTGCTGAAAGAGCA
AAAATAAAAATTAAGAAAGTAGAAAAATAAACTAAATTTAAAGATTAACTGGGCAT
GTTGGCATGCACCTGTATTCTTAGGTATTTCGGGAGGCTAAGGCACAGGATCCCTTGAGC
GCAGGAGCTCAAGGTTGGATTGAGTTGTAATCACACCACTGCACTCCAGCCTCGGTGGCA
[C, G]
AATGAACTGTCTCAAGAAAAAAAAAAGTGACAGAGGGAAACAATATTTGCAATTCATA
GAGCAGATACAGGGTTCATATTCTAATATTAAAAAACTTCTAAAAGTTAAGAAAAAG
GCCAACTGCCCCACAGAAAAATGGGCAAGGAGATAAGAACAAGATTGTTACAGGAAGAG
ACACACAGATGATTATTAATACTGAAAAGATGCTGAGTCTTACTCTTAAGAAAAATTC
ACATTTAAACTACTCTGGGGGCTGGGCAAGGTGGCTCACGCCTGTAATCTCAACTGCG (SEQ ID NO:39)

27151 TCCTAAGAAAAATTCACATTTAACTACTCTGGGGGCTGGGCAAGGTGGCTCACGCCTGT
AATCTCAACACTGGGAGACCAAGGCAGGAAGATCACTGAAGCCAGGGTATCGAGACCAGC
CTGGACAACGTAGTGAGACCTTATCTCTTAAACAAAAACAAAACAAAACAAAAA
AACAGTAAAAATTTGGCCGGGCACAGTGACTCCTGCCTATAATCCCAGCACTTTGGGAAGC
CCAGGTGAGTGGATCACTTGAGGTGAGGTGTTTGAGAACAGCCTGGCCAACATGGCAAAA
[C, T]
TCCGTCTCTACTAAAATTACAAAAATTAGCCAAGTGTGGTGGCATAACGCTGGTAGGGCCA
GCTACTTGGGAGGCTGATGTGAGACTCCATTTAAAAAATAAATAAATAAATAAATAA
TATAGTGGCACACCCCTATAGTTCTCGCTCCTTGGGAGGTTGAGGCAGGAGGATTGCCTG
AGCCCAGGAGTTCAAGGCTGCAGTGAACCATGATCACACCACTGCATTCTAGCAGCCTGG
GAGACAGAGCAAAACCTTGTCTCAAAACAAACAAACAACAAAAACAAAAACACTT (SEQ ID NO:40)

28032 AGGAGCAGAGCCCTGCTCTTCTCATTCACTTACTTTATCTGTAATAAGCATCATTTCTA
CCACACGGTGGTGGTGTGAATAAAATGAGATGAATCTTAGCATAGAGTGCTTAGTAAAG
GTTCTGGACATTTCTAGTAGTTGAATCATGCCAATGTGGTCCCTAGGTGATTGGCTTCT
TTTGCTAGCATGTTTTCAGGGCTCCTCCATGCTGGGGCATTGCATCACTGCTTTATTCCT
TTTTATCGCCTAGTATTATCCACTGTGTGGATAGACCACATTTATCCATTATCAGTTG
[G, A]
AGGATATTTGGGTCTTCCCATTTTTTTTGGCTATGGTGAATAGTACTGTGTACATTTGC
ATATAAGGTTTTGTGTAGATGTGTGTTTTCTTTTTCTTGGGTCTATGCTGAGAAGTGGA
ATTGCTGGTTCATACAGCAGCTCGAACCTTGTGAGGAGCTGCCAGACGCTTTTCCAAGGT
CGCTCCACCATTTTACATTCCCGTCAGCAGTGTGAGAGTCCCAGTTTACCAGCACTTGT
TGTTATCTCTTTTTAACTGTATGTATATATACTTAACATTTTATTATATAATAAATGTACA (SEQ ID NO:41)

28772 AAAATCATCAAGCCGAATCCCACTGTTAGAATTAAAGGTTTTATTTCACTTTCAAGTTA
TCAGGATCCAGGGAGGTGTAATACACTTAGAGGATAGACTCAGCTCATTTCCAGCTATG
CCTTTCAGCAGCATTTACCAGAGTAGGAATATAATGTTAGTCATTATTTAGAGGCCTG
GCCATCTTGAGAAAGTTTACTGTTTAGTCTGCAGTACAATTATACTGTTTTTGTATATT
GGGTTATTTTTTTTCAAGTAGGCCAGTAGCTCTAACAGGAGCCTCTTTAGCCTGAATTC
[G, A]
TCCAAGTAGTGCACTGTTGCACTAGTTGTCCCTCGGGACATGCTCCCAATACGTAACCTC
ACTTCCAGGTTGCAACTGGACACTTACTGGTAGTCAGAAATAGCTATTGCATGGAGCTTA
AAATGAAGTGTATCTTCGTGAAAGATGAGTCTGCAGCTAAGAGACTTTACTGTATATCAT

FIGURE 3U

Docket No. CL001201DIV
Application Serial No. 10/644,021
Inventors: Ming-Hui WEI et al.
Title: ISOLATED HUMAN ENZYME PROTEIN...

AGTGTTTTTTTTTGTTTTGTTTTGTTTTGTTTTGTTGACGGAGTCTCACTCTTTACCCC
AGGCTGGAGTGCAATGGCGAGATCTTGACTCACTGCAACCTCCGCCCCCTAGGTTCAAGC (SEQ ID NO:42)

29572 TCATAGTTCTTATGCACAAAGACCCTTTAATATTGTTTGTAAATTCTCCCCTATGCACAC
GCTGACCTGTTCCCTTAATCTTCTTATCTGTCTAGGTTTGGAGCAGGTATGTTAAGAAAGTT
AGGGGATTTTGCTAAGCCGGAGAATATTGACTTGCCCGTGCAGTGCCTGAATGAACCTTAT
AACCAATGCACTGCACCACATCCCAGATGTCATCACCTACCTTTGAGACTCAGAAACCA
GAGTGTGTTTAACTTCTGTGCTATTCCACAGGTAGGGAACGGGGCTCCTCTGGGTGGATA
[C, T]
GGGGCTAAAGGGAGTGGGGTAGGAGTAAGGGTGGATTTTGTGTGCTATATTCAAGGATA
TGATTCCTTAAAAAGACGATGACTCCAGTTTATTACGCTGGGAGTTTCATAGCACCCGCC
TTTGCTTCCAGCCACCAAACTCAGCTCAGCCTTGAGGTTAAGCCTGCTCCTTTTCAGAAC
CTTCTTCCGGATTTACTATTTTCTACAGCTATCCTAACTAGTTAGGTTCTTTTCTCA
CAGTTAAGTCAAGGTCTTTGGCTTAGATTTATGGGAGTGCTGGGTAAAACCTGGGTGAA (SEQ ID NO:43)

29761 ACTGCACCACATCCCAGATGTCATCACCTACCTTTGAGACTCAGAAACCAGAGTGTGTT
TAACTTCTGTGCTATTCCACAGGTAGGGAACGGGGCTCCTCTGGGTGGATACGGGGCTAA
AGGGAGTGGGGTAGGAGTAAGGGTGGATTTTGTGTGCTATATTCAAGGATATGATTCCT
TAAAAAGACGATGACTCCAGTTTATTACGCTGGGAGTTTCATAGCACCCGCCTTTGCTTC
CAGCCACCAAACTCAGCTCAGCCTTGAGGTTAAGCCTGCTCCTTTTCAGAACCTTCTTTC
[C, T]
GGATTTACTATTTTCTACAGCTATCCTAACTAGTTAGGTTCTTTTCTCACAGTTAAGT
CAAGGTCTTTGGCTTAGATTTATGGGGAGTGCTGGGTAAAACCTGGGTGAAGCTGTTATC
ATTAAAAAGTCTTCATTAAGCACCTAATTACTGCTGCTCCTTTTCTAGACCCGGCATAAA
AAGAACCTGGTCCGCTAGACCTAGCCTCTCAGTATGCTAGGAACCTTACACTTTTATGTTG
CCTTTACCAAGTATTGCAGATACTACTGCAAATAAGTGAAGAAAGTAACAGCATTTAACT (SEQ ID NO:44)

30732 ATTCGTGTGTTGTTGAGAAAGGGAGGAGTGGGGAAGGTAAAAATCTTGACATACTTTCT
TCGTGGGTATTTTTCTTGAGCGATTCCATCTTAGTTGATTAGCAGTTAGCAATTGCCCA
TTCAACAGAAGGTTTTCTTACCTTTTGTGATAATGATAGCTAACGACATCATTTCTTCT
TTTTTCCCTCTCTTCTTGTGTCTTAGGTGATGCCATTGCCACTTTGGCTGCCTGTTA
TAATAACCAGCAGGTGTTCAAAGGGGCAGTGAAGATTGCGAAAGGGCAAGCAGTGACCTT
[G, C]
ATGATGGATGCCACCAATATGCCAGCTGTCAAAGCCATCATATATCAGTATATGGAAGAG
GTGGGTTTTTATTTAACTACTTGGATAATTTGTAGCTACTTTTATGATTTAGTAATGTCA
CTGTTTAACCAGGTTTGGATATTAGATGATCCTAACAATTCATATCCTGTGGCCTAAAG
AGACAGGAATTGATATCCTTTATAAGGAAAAAAGTCTATTACAGGAGCCGAGCAGATTG
CTCACTGCTGTGTAGTACCCTGGTGAGAGGAGATAAATGGAGCAAGGCTGTAGGTTGGAG (SEQ ID NO:45)

30841 GCAATTGCCCATTCACAGAAGGTTTTCTTACCTTTTTGTGATAATGATAGCTAACGACA
TCATTTCTTCTTTTTCCCTCTCTTGTGTCTCTAGGTGATGGCCATTGCCACTTTG
GCTGCCTGTTATAATAACCAGCAGGTGTTCAAAGGGGCAGTGAAGATTGCGAAAGGGCAA
GCAGTGACCCTGATGATGGATGCCACCAATATGCCAGCTGTCAAAGCCATCATATATCAG
TATATGGAAGAGGTGGGTTTTTATTTAACTACTTGGATAATTTGTAGCTACTTTTATGAT
[G, T]
TAGTAATGTCACTGTTTAAACCAGGTTTGGATATTAGATGATCCTAACAATTCATATCCT
GTGGCCTAAAGAGACAGGAATTGATATCCTTTATAAGGAAAAAAGTCTATTACAGGAGC
CGAGCAGATTGCTCACTGCTGTGTAGTACCCTGGTGAGAGGAGATAAATGGAGCAAGGCT
GTAGGTTGGAGCCCCTCAGTAGAATCATAGATTTTGTAGCTGCAAGATGATGCAGGAGGCC
AACCAAGCTTCTTGTGCTGGTGAGGAATGTGAGGTTGAAGCTTGTCTGTGCTGATGCAG (SEQ ID NO:46)

31376 GAGGCCAACCAAGCTTCTTGTGCTGGTGAGGAATGTGAGGTTGAAGCTTGTCTGTGCTG
ATGCAGTGCCTGATTGAGTGGATCTCTGGCTCCCGTCCATGTGCTGACACCCAGTCTG
GTACTTTTATTATGCCACAGGCCTCAATTGAAAAATCACAGTAGGGAATTTAGGCCAAGG
AAAGCCATCAAGTTGCAATTATTTCTTAAATTTTCTTTGGAAAAATTCATTTCAAATACC
AAAACCATCCTATAAAAAGAACTTACCTTCTTAGGTCAAATCTCTAATATTTGACTAG
[G, A]
TTCAAAAAGTTTATTTCTGGCCAGGCACAGTAGCTTACTCCTGAAATCCCAGCACTTTGG
GAGACCAAGGTGGGAGGATCACTTGAGGCCAGGAATCAAGACCAGCCCGGGCGACATAG
CAAGACCCCTTTTACAAAAAATTTAAAAATTTGTCATGGTGGTGACACGCTGTGGTCCC
AGCTACTCAGGAGGCTGAGGCAGGTGGATCACATGAGCCTGAGAGGTGAGGCTACAGTA
AGCTGTGTGATTTTCATCATTGCACTCTAGCCTGGGTGATAGAGTGAGACTTTGTCTCAA (SEQ ID NO:47)

FIGURE 3V

Docket No. CL001201DIV
Application Serial No. 10/644,021
Inventors: Ming-Hui WEI et al.
Title: ISOLATED HUMAN ENZYME PROTEIN...

32032 TCTCTAGGCCCTAGAGCAGTGGTTTGTAAATGGAGGTGATTTGCTCCCCTCCCCCAGAG
GACATTGGACAATGTCTGGAGACATTTTGTATTGCTCTAACCAGGAGGAATCGGGTGCTA
CTGGCAATCTGGTGAGTAGAGGCCAGGATGATGCTGTGATCCTCAGGTGTGATCCTGTTG
AGAAATGAAACACTGTAGACTTTATGAAAACATACAAGACCCTCATCATTTTTCCTTTGCC
TGAGCTCCCTCCCCAGAGGTACCTCTGTTTCATGGTTTGTGTCATCCGTCTAGTCCCCCT
[A, G]
TTACCGCTTTACAGGAATATGGTTTGAACAGTGTTCATCTAAATAGAATTATACAAA
ATAGCGATTTCTGATTTCTCTTGCAATATGCACATTCTTCTTATACTTCTCCCTACCTT
TATCTGACACAGAAATGCTGTATGTCCAGAACTTCTATCAGAGGCACCTATGGAAGTCTA
AGGGAAGACCACATCGCTTTTAAAAACCTAAAATTTTGTAGTCACTAGATGAAAATATT
CAGCCAGTGACCCAAAAAATTGCTACCAATGAGACTCTCCATTTTGCCATGTAGCCAGAA (SEQ ID NO:48)

32525 ATCGCTTTTAAAAACCTAAAATTTTGTAGTCACTAGATGAAAATATTGAGCCAGTGACC
CAAAAAATTGCTACCAATGAGACTCTCCATTTTGCCATGTAGCCAGAACTTACTTTGATC
TATGTGCTGGGGTAGTGACCAAGTAGGTGGGTAGGAGTAATCTCAGGGAACTTGAGGC
CCCAGCCTCATGGCTAGGGTCATAATTTGAACCCAGGTCTGTCTGACATCAGAAATCCATG
ATGTTAACCCCAATTCTAAGGGGTCAACTACCCTTCTAAATGGAATCCTGCTATATTA
[A, G]
GCACTATTTATTCATTTTATATAAACTAGAAACATTTTATGTAGTAAGTAGTTGAGAGTG
TTTTGGTTTTGTCAGTTTGATCACTAGTTTTAGAAACAGTTTTTAAACACTTTTGGCCA
ATTCCATTACTATATTAATTCAGATTTTATTTGGTTTTTCTTAATATTGGGATTAA
TCCTGGTTGTAATTCATAGTTTGAAGGCGAGGGTGGGCAGTCTACATTTGGCTGAGCCCT
GTTTTGTGAATAAATGTTATCAGAACACAGCCACACCCATTTGCTTCTATGTCTTCTGT (SEQ ID NO:49)

34179 CTGCTGTATGTAGCACAGCATTGCACAAGAGCTTATTTAGTCTAGTAAACATTTATAGG.
AGCCTGTGTCAATTAATCATCAAGCCTCGCACTGTGGCTCACACCTGTAATCCAAAACT
TTGGGAGGCTGAGGCAGGCAGATCACTTGAGGTAAGGAGTTCGAGACCAGCCTGGCCAAT
ATGGCAAAACCTGTCTCTACTAAAAATACAACATTTAGCCAGGTGTGGTGGTGACACT
TGTCATCCCAGCTATTCGGAGCCTGAGACATGAGCATCGCTTGAACCTCGGGAGGTGGAG
[G, T]
TTGTAGTGAGCTGAGATGGCACCCTGCACTCCAGCCTGGGCAACAGGGTGAAGGCCCTT
TCTCAAACCTCCTCAAGTATTTGGCTTCAACTTTATGCCGGGCATGTAGATGAAAAGTCGG
CTATGACCTGTCTTGACAAGCAGATGTAACCTCCTTGATTGAGGCTAGTAGGTTTTAAG
ACCTGAATAATTGAGTTTGCAGAAACCTACTGTGTGCCTTCAGGTAAATGGAGAGTGGGG
TTTGGTCTAGCAACGAAGCATCTAGAAGGTCTCTTTGGCCTTACCGCTCTGTTTTAGGT (SEQ ID NO:50)

34249 ATTTAATCATCAAGCCTCGCACTGTGGCTCACACCTGTAATCCAAAACTTTGGGAGGCT
GAGGCAGGCAGATCACTTGAGGTAAGGAGTTCGAGACCAGCCTGGCCAATATGGCAAAAC
CCTGTCTCTACTAAAAATACAACATTTAGCCAGGTGTGGTGGTGACACTTGTATCCCA
GCTATTCCGGAGCCTGAGACATGAGCATCGCTTGAACCTCGGGAGGTGGAGGTTGTAGTGA
GCTGAGATGGCACCCTGCACTCCAGCCTGGGCAACAGGGTGAAGGCCCTTTCTCAAAC
[T, C]
CTCAAGTATTTGGCTTCAACTTTATGCCGGGCATGTAGATGAAAAGTCGGCTATGACCTG
TCCTTGACAAGCAGATGTAACCTCCTTGATTGAGGCTAGTAGGTTTTTAAGACCTGAATAA
TTGAGTTTGCAGAAACCTACTGTGTGCCTTCAGGTAAATGGAGAGTGGGGTTTGGTCTAG
CAACGAAGCATCTAGAAGGTCTCTTTGGCCTTACCGCTCTGTTTTAGGTAAGTCCACGT
CTGAGTACCAGTGACTGCAGCTCTTCCAGTTGTGCTGTATGTTTATATGTTAGAAATGA (SEQ ID NO:51)

34451 GAGCATCGCTTGAACCTCGGGAGGTGGAGGTTGTAGTGAGCTGAGATGGCACCCTGCACT
CCAGCCTGGGCAACAGGGTGAAGGCCCTTTCTCAAACCTCCTCAAGTATTTGGCTTCAACT
TTATGCCGGGCATGTAGATGAAAAGTCGGCTATGACCTGTCTTGAACAAGCAGATGTAAC
TCCTTGATTGAGGCTAGTAGGTTTTTAAGACCTGAATAATTGAGTTTGCAGAAACCTACT
GTGTGCCTTCAGGTAAATGGAGAGTGGGGTTTGGTCTAGCAACGAAGCATCTAGAAGGTC
[T, C]
CTTTGGCCTTACCGCTCTGTTTTAGGTAAGTCCACGTCTGAGTACCAGTGACTGCAGCT
CTTCCAGTTGTGCTGTATGTTTATATGTTAGAAATGATCATCAAAGGACTCAAAGTTT
TGCCACTAATTGTATTACCGGGGACTGTCAACAACAGATTTCTCTAATTTATTCACCT
TACTTATCTCCTGGAAGGCATATTGAAGTGCTCTTGGAGTTCTCTAAAGGGTTTTTGT
TGGTTGTGTATATCACTTGGGTGCCAGCATTGATTCCAAATAAGTAAATCTTTTTTCC (SEQ ID NO:52)

34532 AGGCCCTTTCTCAAACCTCCTCAAGTATTTGGCTTCAACTTTATGCCGGGCATGTAGATGA

FIGURE 3W

Docket No. CL001201DIV
Application Serial No. 10/644,021
Inventors: Ming-Hui WEI et al.
Title: ISOLATED HUMAN ENZYME PROTEIN...

AAAGTCGGCTATGACCTGTCCTTGACAAGCAGATGTAACCTCTTGATTGAGGCTAGTAGG
TTTTTAAGACCTGAATAATTGAGTTTGCAGAAACCTACTGTGTGCCTTCAGGTAAATGGA
GAGTGGGGTTTGGTCTAGCAACGAAGCATCTAGAAGGTCTCTTTGGCCTTACCGGCTCTG
TTTAGGTAAGTCCACGTCTGAGTACCAGTGAAGTGCAGCTCTTCCAGTTGTGCTGTCATG
[T, C]
TTATATGTTAGAAATGATCATCAAAGGACTCAAAAGTTTTGCCACTAATTGTATTACCGG
GGACTGTCACAACCAAGATTTCTCTTAATTTATTCACCTTACTTATCTCCTGGAAGGGCA
TATTGAAGTCTCTTGGAGTTCTCTAAAAGGGTTTTTGGTTGGTTGTGTATATTCATTGG
GTGCCAGCGATTGATTCCAAATAAGTAAATCTTTTTTCCCAAAGGATGTAAGATGGCTT
ATGGTTATAAGTACAACAGGCTAACAAAGTACAAGTAGATGAGAAAGTAAATGAAGAAA (SEQ ID NO:53)

36541 GGTAGGAGCCAGTTGAAGGGACGTGGGAGGCGCATTCCAGAGAGAAGGAGTGGTATGAGA
CTGGAACAGAGGTGTGCAGCAGCATCGCATGGGCGAAACAACAGTAGACAGTTGTTCTTT
TGTTTTTGTGTTTTTGGAGCAGGGTCTTGTCTGTCTATCCAGGCTGGAGTGCAGTGG
CATGATCTCGGATCACTGCAACCTCCACCTCCAGGCTCAAGTGATCTTCCCACCCAGT
CCCCAAGTAGCTGGGGGACCACAGGTGCATGCCACGATGCCCGGCTAATTTTTGTACATT
[T, C]
TGTAGAAAACAGGGTTTTACTGTGTTGTCCAGGCTGGTCTTAAACGCCTGAGCTTAAGCAG
TCTACATGCCTCAGCCTCCTGAAGTGCTGGGATTCCAAACATGAGCCACTGTGCCTGGCC
CGGCAACTGTTACTAGACTATAGAGAGGGAGGTGGGCAAGGGCTGGTGACACTAGACAGG
TGCAGTAGGTCTGGACCATGGGTGGCCTTGCCTACACATTACAGAGCTCAGGCTTTTTT
TCTCCAGGTGAGAGGGCTGGTGCCACTGAGGCATCAAGCAGAGGTTTGTAGATCTCCTTGG (SEQ ID NO:54)

36607 CAGAGGTGTGCAGCAGCATCGCATGGGCGAAACAACAGTAGACAGTTGTTCTTTTGTGTTT
TGTTTGTGTTTTTGGAGCAGGGTCTTGTCTGTCTATCCAGGCTGGAGTGCAGTGGCATGAT
CTCGGATCACTGCAACCTCCACCTCCAGGCTCAAGTGATCTTCCCACCCAGTCCCCAA
GTAGCTGGGGGACCACAGGTGCATGCCACGATGCCCGGCTAATTTTTGTACATTTGTAG
AAACAGGGTTTTACTGTGTTGTCCAGGCTGGTCTTAAACGCCTGAGCTTAAGCAGTCTAC
[A, G]
TGCCTCAGCCTCCTGAAGTGCTGGGATTCCAAACATGAGCCACTGTGCCTGGCCCGGCAA
CTGTTACTAGACTATAGAGAGGGAGGTGGGCAAGGGCTGGTGACACTAGACAGGTGCAGT
AGGTCTGGACCATGGGTGGCCTTGGCTACACATTACAGAGCTCAGGCTTTTTTCTCCA
GGTGAGAGGGCTGGTGCCACTGAGGCATCAAGCAGAGGTTTGTAGATCTCCTTGGTGACAG
TGTAGAGCAGACAGGTAGATTTGGGAATTTAAGCTTAGACTCACGTTGGAGACTGAGATA (SEQ ID NO:55)

36681 GACAGGGTCTTGTCTGTCTATCCAGGCTGGAGTGCAGTGGCATGATCTCGGATCACTGCA
ACCTCCACCTCCCAGGCTCAAGTGATCTTCCCACCCAGTCCCCAAGTAGCTGGGGGACC
ACAGGTGCATGCCACGATGCCCGGCTAATTTTTTGTACATTTTGTAGAAACAGGGTTTTAC
TGTGTTGTCCAGGCTGGTCTTAAACGCCTGAGCTTAAGCAGTCTACATGCCTCAGCCTCC
TGAAGTGCTGGGATTCCAAACATGAGCCACTGTGCCTGGCCCGGCAACTGTTACTAGACT
[A, G]
TAGAGAGGGAGGTGGGCAAGGGCTGGTGACACTAGACAGGTGCAGTAGGTCTGGACCATG
GGTGGCCTTGGCTACACATTACAGAGCTCAGGCTTTTTTCTCCAGGTGAGAGGGCTGG
TGCCACTGAGGCATCAAGCAGAGGTTTGTAGATCTCCTTGGTGACAGTGTAGAGCAGACAG
GTAGATTTGGGAATTTAAGCTTAGACTCACGTTGGAGACTGAGATAGCTCATCTGAGAGG
CACTCAGGGCCTAATCTCAGGCAGTAATTTTAGGGATGTAGGGGAAGAGATGGATTCTGC (SEQ ID NO:56)

37493 TGACGTTTATTGGGCCTGGCACTGTGAGGTGCTGGGGATGTGAAGATCATTGTGGCTCAG
CCGCTGCTCTCGAGGGCCTCTGGGTGCAGTATGCACACCTGTGCCTCCTGTTTGCTCAGG
AAGACAGGCTTTTGTAGATGAGCTGGGGCTGACATCCCCACCTTATCATTTGGGATGGCTTG
GGTAAGTTATGTTTCTGTTCTCTGAGCCTCCCTTTCCTCATTGGTAAAATGGGTATAAAA
TACCTGCCAGTGGAGGGTGTGTTAAGTAGCCATGGAAAATGTAAAGCACATAGCACTTA
[C, T]
CATTTTTTCTGTGTCTTTAACAGATTTATCATAGAATCCCCGACTCAGACCCATCTTCT
AGCAAAAACAGGCAGATCATCTCCACCATCCGGACGCAGAATCTTCCCAACTGTCAGCTG
ATTTCCCGAAGCCACTACTCCCCATCTACCTGTGCTTTGTCTGCTTTTGGCTGCCCTG
AGCTGGCAGTACCTGACCACTCTCTCCAGGTAACAGAAGACTATGTTGAGACTGGAGAA
CACTGATCCCAAATTTGTCCATAGCTGAAGTCCACCATAAAGTGGATTACTTTTTTTCT (SEQ ID NO:57)

37966 CTGCCCTGAGCTGGCAGTACCTGACCACTCTCTCCAGGTAACAGAAGACTATGTTTCAGA
CTGGAGAACACTGATCCCAAATTTGTCCATAGCTGAAGTCCACCATAAAGTGGATTACT
TTTTTTCTTTAAGGATGGATGTTGTGTTCTCTTTATTTTTTCTACTACTTTAATCCCT

FIGURE 3X

Docket No. CL001201DIV
Application Serial No. 10/644,021
Inventors: Ming-Hui WEI et al.
Title: ISOLATED HUMAN ENZYME PROTEIN...

AAAAGAACGCTGTGTGGCTGGGACCTTTAGGAAAGTGAAATGCAGGTGAGAAGAACCTAA
ACATGAAAGGAAAGGGTGCCTCATCCCAGCAACCTGTCTTGTGGGTGATGATCACTGTG
[C,A]
TGCTTGTGGCTCATGGCAGAGCATTCAAGTGCCACGGTTTAGGTGAAGTCGCTGCATATGT
GACTGTCATGAGATCCTACTTAGTATGATCCTGGCTAGAATGATAATTAAAAGTATTTAA
TTTGAAGCACCATTTGAATGTTTCGTACTAGTAGAAAATGATGTGAATTTTCTTTCTGTTC
GGCTCCTATTTTCTCATCATTTTGTCTTTCTTTAATTGGGTTGAATGGAGTAGATAGAAA
TATTTATGGTTTAGGTAACAGTTAGATGTTTCTTAAGAATGCAAACTGCCTTTTCCACAC (SEQ ID NO:58)

37973 GAGCTGGCAGTACCTGACCACTCTCTCCCAGGTAAACAGAAGACTATGTTTCAGACTGGAGA
ACACTGATCCCAAATTTGTCCATAGCTGAAGTCCACCATAAAGTGGATTTACTTTTTTTC
TTTAAGGATGGATGTTGTGTTCTCTTTATTTTTTCTACTACTTTAATCCCTAAAAGAA
CGCTGTGTGGCTGGGACCTTTAGGAAAGTGAAATGCAGGTGAGAAGAACCTAACATGAA
AGGAAAGGGTGCCCTCATCCCAGCAACCTGTCTTGTGGGTGATGATCACTGTGCTGCTTG
[T,C]
GGCTCATGGCAGAGCATTCAAGTGCCACGGTTTAGGTGAAGTCGCTGCATATGTGACTGTG
ATGAGATCCTACTTAGTATGATCCTGGCTAGAATGATAATTAAAAGTATTTAATTGAAG
CACCATTTGAATGTTTCGTACTAGTAGAAAATGATGTGAATTTTCTTTCTGTTCCGCTCCT
ATTTTCTCATCATTTTGTCTTTCTTTAATTGGGTTGAATGGAGTAGATAGAAAATTTTAT
GGTTTAGGTAACAGTTAGATGTTTCTTAAGAATGCAAACTGCCTTTTCCACACAAAGGCT (SEQ ID NO:59)

38113 TCTCTTTATTTTTTCTACTACTTTAATCCCTAAAAGAACGCTGTGTGGCTGGGACCTT
TAGGAAAGTGAAATGCAGGTGAGAAGAACCTAACATGAAAGGAAAGGGTGCCTCATCCC
AGCAACCTGTCTTGTGGGTGATGATCACTGTGCTGCTTGTGGCTCATGGCAGAGCATTTC
AGTGCCACGGTTTAGGTGAAGTCGCTGCATATGTGACTGTGATGAGATCCTACTTAGTAT
GATCCTGGCTAGAATGATAATTAAAAGTATTTAATTTGAAGCACCATTGATGTTTCGTA
[C,A]
TAGTAGAAAATGATGTGAATTTTCTTTCTGTTCCGCTCCTATTTTCTCATCATTTTGT
TTCTTTAATTGGGTTGAATGGAGTAGATAGAAAATTTATGGTTTAGGTAACAGTTAGAT
GTTTCTTAAGAATGCAAACTGCCTTTTCCACACAAAGGCTGGGAATAAAATTCTGGGTAT
TCTCGTATTCTCATTTAAAGGAGTTTAGCTTTCAGAGAGAAACAGCAGGATTGCTTTTGA
CCTTTTAGAAGATTGGTCTCCAGTAAAGGTGGACATTTTGTAGATTTTATAATAAAGAA (SEQ ID NO:60)

38298 CACGGTTTAGGTGAAGTCGCTGCATATGTGACTGTGATGAGATCCTACTTAGTATGATCC
TGGCTAGAATGATAATTAAAAGTATTTAATTTGAAGCACCATTGATGTTTCGTACTAGT
AGAAAATGATGTGAATTTTCTTTCTGTTCCGCTCCTATTTTCTCATCATTTTGTCTTCT
TTAATTGGGTTGAATGGAGTAGATAGAAAATTTATGGTTTAGGTAACAGTTAGATGTTT
CCTAAGAATGCAAACTGCCTTTTCCACACAAAGGCTGGGAATAAAATTCTGGGTATTCTC
[G,C]
TATTCTCATTTAAAGGAGTTTAGCTTTCAGAGAGAAACAGCAGGATTGCTTTTGACCTTT
TAGAAGATTGGTCTCCAGTAAAGGTGGACATTTTGTAGATTTTATAATAAAGAAATTTAA
TTGCTCTGCATTTGTCAAGTACAGTTTCGCTTGAAGCCTGCCTGACTGTGGAAAAGATGG
AGCTCAAGAATGGAGTTGATGGCCAGCGTGGTGGCTCATGCCTGTAATCCCAGCACTTT
GGGAGGCTGAGGCGGTCGGATCACGACATTAGGGGATCGAGACCATCCTGGCTAACACGG (SEQ ID NO:61)

FIGURE 3Y